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# GARDENER'S MAGAZINE.

EDITED BY JOSEPH BRECK.

VOLUME III.

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# HORTICULTURAL REGISTER,

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#### GARDENER'S MAGAZINE.

JANUARY 1, 1837.

(From the Quarterly Journal of Agriculture.)

ART. I. — Horticulture — Common Cabbage, Early York Cabbage, London New York Cabbage, Savoy, Broccoli, and Early White Warwick Pea. By Mr Towert, Author of the Domestic Gardener's Manual, &c. C. M. H. S.

The Brassica, or cabbage tribe, presents us with the most important crops of the season, I mean the period included between the first of June and the two succeeding months. It is proposed to select three of the numerous species, namely, 1st Common round-headed or hearting cabbage—2d, The Savoy—3d, Broccoli.

1. The Common Culinary Cabbage, Brassica, oleracea, Sect. 4. of Decandolle, No. 4. elliptica, the Early York and particularly that fine improved variety, now called London New York Cabbage. All the members of the tribe belong to one family or genus, termed Brassica: they are found in the natural order Cruciferae, the leading characters of which are four opposite petals, ranged in the order of a cross; there are four petals or calyx-leaves, six stamens, two of which are rather shorter than the other four, and this latter circumstance gave rise to the name selected by Linnæus to designate the member of his 15th class Tetradynamia, a compound Greek word, which indicates the power of supremacy of four out of six fertilizing organs. It may be of some importance to the farmer and cottager to be informed that, among all the plants of this class or natural order, not one perhaps is possessed of any really deleterious property. Among nearly one thousand species, as Dr. Lindley ob

serves, "scattered over the face of the world, all are harmless, and many highly useful."

The varieties of the cabbage are numerous, but he who possesses the best Early York, has that which combines most of the valuable qualities of that excellent vegetable-compactness of heart, firmness, sweet flavor, and convenient size and form; it is also hardy, of very ready culture, and occupies but little space. I do not recommend it merely as a culinary vegetable; it might, and I think should, be made to rotate with the crops of the farm. It is not my desire now to digress, but I hope on a future occasion to adduce facts which will go far to prove that every farm throughout the kingdom would be improved, and the agriculturists proportionally benefitted, by a greatly enlarged rotation. The land has powers and capabilities to double its productive return: We southerners are much indebted to our northern brethren for the lessons of wisdom which their refined system of agriculture has already taught us, but these cultivators, skilful and persevering as they have effectually proved themselves to be, may still advance; and with this conviction before me, I hope I may not be deemed presuming, if, at the earliest opportunity, I venture to attempt to fulfil the intention which I have alluded to above, and for which I am collecting the requisite documents.

The soil for cabbage should be a sound mellow loam, of a quality usually termed fat, or unctuous, wherein the silex, which forms its chief constituent, is in a state of extremely minute division, and united to a greater proportion of argillaceous earth (alumine) than most common, gritty soils are; but the chief desideratum of an unctuous loam is the impalpable state of the silex; for I have analyzed one of the finest loams I ever saw, without being able to detect in it more than five or six per cent. of clayey substances, and scarcely a grain of chalk. But the cabbage will do well in most soils, provided it be exposed to the full influence of light and air, and be not shaded or stifled by trees, shrubs, or buildings.

Seed.—This will retain its vegetative power for three or more years, but it is always better to employ that produced in the preceding season, or if two or three year old seed be used, it should be tried in heat, sown in a flower pot: a serious loss of time may be occasioned by a failure of the seed-bed. An ounce of seed will suffice to sow forty square feet, if scattered broadcast, but less will

be required if it be sown in drills, six or seven inches asunder; and this method is always advantagous, because the Dutch or thrust-hoe can, at any time, be passed easily between the rows. If cabbage be cultivated in the field, it is calculated that half a pound of seed will afford more plants than will grow on an acre; and it is stated, in recommendation of the vegetable for the purposes of the farm, that if the cabbages be cut, freed from bad leaves, and carried to the cow-yard, "they are more beneficial than hay, given in any proportion, when only combined with straw."

In the fattening of neat cattle, an acre of good cabbages may be sufficient for three beasts of from forty to fifty stones each, which have been grazed in the pasture during the summer. A middle-sized bullock, in general, consumes about 100 lbs. in twelve hours."\*

"Half an acre will be nearly sufficient for 100 sheep, when the crop is good; a sheep consumes nearly 10 or 12 pounds in twelve hours."

— (Baxter's Agric.) I have repeatedly tried cabbage in cow feeding, and on every account recommend the substitution of York cabbages for the coarser and more bulky varieties.

In garden-culture, we have to consider the object of the cultivator; If spring or early summer cabbage only be required, one sowing of a single long row or a small bed will suffice. In the southern or middle counties of England, it is usual to limit the period of sowing between the 6th and the 12th days of August; but in the north, I presume that the third or fourth week of July will produce plants which are liable to run to seed in the following spring; while, on the contrary, the plants of late sowing rarely acquire strentgh sufficient to resist the rigors of the winter. The soil for a seed-bed ought to be lighter than that used during the future growth of the plants; it should be moved to the depth of a few inches, and made very fine: then, the line being strained tight, the first drill is to be cut by drawing the angle of a hoe in the direction of the line, with its edge resting against it. An inch or less in depth is sufficient; but, as all seeds rise better if they rest upon a true surface, and be

<sup>\*</sup>There must surely be some error in this statement, of an acre of cabbage being able to fatten nearly three beasts of from 40 to 50 stones each; 100 lbs. of cabbage in twelve hours, that is the average number of hours of day-light in each day, for twenty weeks from the end of October, will amount only to 6 tons 5 cwt. Now a middled-sized ox will, in that time, consume 30 tons of Swedish turnips. Do 6 tons 5 cwt. of cabbage yield as much nutriment as 30 tons of Swedish turnips.—Ed.

closely embraced by the mould, it will be proper to level and compress the bottom of the little drill by patting it with the back of a wooden, round-headed rake, or by placing a long pole, like the handle of a rake, into it, so as to form a sort of groove. In this the seeds are to be scattered as regularly as possible, after which it would be as well to dust them over regularly with a powder composed of two parts (say pounds) of powdered quicklime, one part of coal-soot, and one sixteenth part (one ounce) of flour of sulphur. This mixture is inimical to insects, and does not injure the young plants. The groove is next to be filled up with fine earth, which is to be made firm and even, by pressing it down with the flat of the In like manner, all the other drills may be made and finished. If the weather be showery, and the ground in a moist state, but still free and open to work, nothing more need be done. It sometimes happens, however — as was the case to a very injurious extent throughout the summer in 1835—that the soil is found dry even to dustiness. In that case, as it will not answer to let the critical period pass over, the intended bed should be watered copiously for three successive nights, till it become completely moist, and a mat or two must be thrown over it during the intervening days. Seeds sown in soil thus prepared, will vegetate very rapidly; for warmth and moisture are the prime actuating agents of vegetative life, as direct solar light as that of maturation. Waterings, or rather ordinary sprinklings, so termed, will prove of no avail, if the seeds have been sown in arid soil, as was fatally proved last year. In hot sunshine, the mat ought to be used till the seeds vegetate. The seedling plants will be liable to the attacks of slugs and other enemies; to guard against which, they may be sprinkled with a little of the powder mentioned above; or the spaces of soil between the rows may be covered with dry saw-dust or chaff; but thick sowing is perhaps the most effectul means to secure a sufficient supply, and it is always prudent to practice it, because many seeds are inert; and it is better to displace the supernumeraries by timely thinning, than to have a paucity of plants, nine-tenths of which may perish by accidents. When the first true leaves appear, and acquire a little strength, much of the danger will be past, and the plants ought to be thinned out, so as to stand an inch asunder. Again, as they advance in growth, they ought to be reduced in number till double that space intervene between plant and plant

Transplanting. - Some gardeners have attempted to obviate this operation; but the roots first produced are few in number, though strong, and of considerable length: the plants also acquire a tall and shanky growth; and above all, it is evident that, if cabbage plants be made to perfect their growth on the site where the seeds were sown, the allotted space must be very great, because they must be thinned out so as finally to stand one foot asunder at the least. Transplanting, therefore, should be practised, and that, too, as soon as the young plants have become three or four inches high, and begin to crowd each other. The operation effects two or three good objects. It causes the roots to produce a number of short fibres, or, as it is termed, to become "stocky," it dwarfs the plants, and, while making them strong and compact, secures them to the soil; and it enables the grower to protect those left in the seed-bed (as some always should be) by covering of mats thrown over arches, formed of hoops or pliable rods, in the event of very severe weather.

In transplanting, let the bed or plot be a good firm loam if possible, pretty well manured, thoroughly digged, and in a free, open situation. Select strong plants of nearly equal growth, and insert them in rows by means of a dibble or trowel, fixing each firmly in the soil, eighteen inches apart every way, if the variety be a free grower; but the small Yorks will do very well if the rows be that distance apart, the plants standing only twelve inches asunder in the lines or ranks. It is indispensable that the soil be brought closely to the roots; and made to press them firmly in every part; and should the weather be dry, much time will be gained by making the holes so deep as to receive the plant to the full length of the stem of each, and filling every hole brimful of salt water: then, by pressing the soil laterally and on every side with the tool, the roots will become puddled in, and secured at once. The period for the work must depend upon the growth in the seed-bed; and if the season be early, and the weather warm and showery, the transplanted cabbages may grow so rapidly as to require the check of a second removal, or at least to be raised up and re-set; but in general, and under ordinary circumstances, it will be sufficient to leave them undisturbed, as then the crop will be ready for culture at a more early period of the spring. In the south, it is no uncommon circumstance to cut fine-hearted cabbages in April, and very good ones in May. In the north, the growth must be more tardy in most situations.

The seed-bed will require care and attention. I have said that some plants ought to be left in it; and I urge the practice, because, in severe winters, the entire crop is sometimes cut off. The seedlings remaining, ought, however, to be raised up; the longest roots cut back nearly one-third, and the plants be re-set in regular order and distances. Thus, supposing that 200 plants remain in it, and be made to stand four inches apart in rows which are six inches asunder, a bed little more than twelve feet long and about three feet wide, including its edges, will contain this valuable stock, which in severe weather could be covered by three or four garden mats, and thus secure a pretty ample supply of plants for the spring. Another precaution may always be resorted to. In transplanting, deep drills or grooves can be formed by the hoe or spade, and along these the plants may be set so deep, that the lowest leaves may stand just above the soil. I adopted a still more efficient plan of security last October, though I do not recommend it because I think the growth in the early spring months is thereby retarded. Having a piece of ground set up in ridges, nine inches high, and the time pressing, I planted my young cabbages in the bottom of the trenches between the ridges. On three occasions, the thermometer fell twentytwo degrees below the freezing point, and not a plant has been touched, though no covering was applied at any period of the winter. My broccoli, also, has stood in perfect security, in consequence of the stems being lower than the level of the edges of trenches made expressly for them. However, as cabbages ought to be hoed freely in the autumn, and the spaces between the rows digged once or twice, as soon as the plants resume growth in the early spring, it is evident that the ridges present an obstacle to these important operations. If the winter prove mild, the cabbages will progress in some degree; but if by cold they be rendered torpid, they will start into growth with the early return of solar influence: a few may fly up to seed, but the greater part will form hearts, and can be cut in succession. In cutting, it will be prudent never to take off the green and healthy leaves, those that are inert and yellow will scale off of themselves, or with the slightest effort: but the green and firm ones have still an important office to perform, in perfecting the auxiliary buds which produce young sprouts. These secondary cabbages, or "greens" affect an open growth, and in themselves furnish a delicious vegetable; but they may - that is a portion of the best formed among them — be devoted to another purpose of considerable utility in garden economy. The shoots when about five or six inches long, are to be gently twisted off from the stein, and the lacerated heel of each being trimmed perfectly even and smooth with a very sharp knife, but not shortened; the young plant thus rendered a cutting is to be very carefully planted in lightish, sandy, fresh moved loam, so deeply as nearly, but not quite to include the entire stem. The setting-stick or dibble is to be thrust diagonally into the ground in three or four places, in the direction of the heel, so as to fix it firmly in the soil, and then a little water should be given to each plant to wash the earth closely about the stem. Detached sprouts so treated, will frequently produce roots speedily, and bring a supply of excellent secondary cabbages, true to the original varieties; seeds are apt to sprout, owing to cross impregnations.

( To be continued.)

ART. II.—On Inarching and Laying Stove, Green-house, and other curious or Rare Plants.—By a foreman of a London Nursery.

THERE are many of the most curious and splendid stove, green-house, and hardy shrubs, which are only to be propagated but by the methods of either Inarching or Laying them, or if they can be struck from cuttings they seldom grow in a healthy condition afterwards. But a weekly growing species inserted upon the stock of a free growing kind, will cause it to bloom far more profusely and vigorously. An additional advantage too is afforded, by being enabled to obtain a plant of considerable size in a short time.

I have, therefore, drawn up some practical observations upon the method which I have pursued most successfully for twelve years.

Inarching is a species of grafting differing from it in these particulars, that whereas in grafting, the scion is at once totally separated from its parent plant, and the head of the stock is cut clear off before the splicing takes place; here on the contrary, neither the scion is seperated from its parent, nor the head of the stock taken away, until the union becomes so far complete that the first is unnecessary, and the latter injurious. It is in consequence much

preferable to the common grafting, for evergreens in particular; it is principally practised as the best means of multiplying all the double varieties of Camellia and plants of similar habits; because their strong leaves, if only for a few days deprived of their regular support, by being cut clear from the mother stock, if not covered closely with a glass will be certain to wither and fall off; after which, there will be but very slender chance of the scions completing a union; it is performed as follows:—

Having provided a stock, which should always be some of the coarser, free kinds, of the same genus of plants, and nearly of the same diameter as the shoot which is intended for inarching; cut a thin slip, from two to three inches long, and about one third or something better of the whole thickness, smoothly off from each of them, in the clearest part of the stem with a small sharp knife, (a most necessary instrument for the business,) the back of each must then be fitted together in the most exact manner, at least on one side, and tied perfectly tight with good matting; they must be clayed in the same manner as grafts; and, as being within doors in a warm house will occasion the clay to become over dry, and liable to crack, they should, at least in dry weather, receive two or three times a week, some water from the nose of a water-pot, or by means of a syringe, to preserve it in a proper warm state, observing to do it in the evening lest the leaves should get scorched by the rays of the sun: a little moss tied neatly round each ball of clay will prevent the water being so frequently necessary: which is in my opinion very desirable. Eight or ten weeks will in general be found sufficient time for them to unite; at all events, by that time, I think, they may be partially separated from the parent plant by cutting the inarched shoots better than one half through; and if, on trial, they are found to be united, and bear the operation well, they may in a few days afterwards be entirely cut off and placed in a shady part of the house, where they must be kept moderately syringed as before, and some additional shade given according to the state of the weather for two or three weeks; during which time, they may be untied, and the top of the stock be cut off in a neat manner; and also any unnecessary part of the bottom of the scion that may remain; let a little clay be again applied, that these fresh wounds may have sufficient time to become properly healed, which will take place in a few weeks. In this manner have I succeeded with

Myrtus Pimento, and other plants allied to it, which are particularly difficult to strike or propagate, by any other means, on the common myrtle with tolerable success; and also many other plants of the same description upon their kind.

In laying, choice should be made of the young tender shoots of the present year, the soft bark of which will sooner form a callosity, and produce roots, than that of any of the preceding year's growth. It is particularly necessary to observe, whether the plant intended to be layed is of a brittle nature or not; for if it is, it will be necessary that the shoots be pegged gently down to the surface previous to laying, and thus left, until their tops naturally acquire a perpendicular direction, which they will do in a few days; without this precaution it will be extremely difficult to tongue them without cracking, or breaking them off; but if treated in this manner, the most brittle may be layed without danger.

By tongueing is meant, the operation of cutting a small longitudinal scalp about half an inch in length, on the inner side of the heel or bend which is inserted into the earth; about one third of it should be cut off in a transverse direction; it being so placed, that the transverse cut may be immediately on or below the joint; but by no means is the whole of it to be cut away, as practised by some, it being the part which in most instances produces the first fibres. Having the layer thus prepared, the earth must be opened with the hand about three or four inches deep, and in the direction of the shoot, into which opening, it would be advisable to put a little fresh loam or sand for the immediate reception of the layer; which should be fixed therein at least three inches under the surface, the tongue should be gently twisted sideways so as to prevent its resting within the heel or bend, and the mould immediately closed over it; as many layers as are wanted being thus made, let the whole have a moderate watering to settle the mould, and be set or plunged in a good growing heat; as it is of considerable importance to keep the parent plant in a free growing state.

There are many plants that produce roots so freely, that should a branch even touch the ground, they strike almost immediately; these every gardener will soon become acquainted with by their natural efforts, and therefore will find it sufficient for their increase merely to insert them in the mould; noting however that a slight twist on the part inserted will considerably promote their rooting.

It is a conclusion drawn from several experiments, that the layer, which is inserted to a proper depth, roots sooner and better than that which is layed nearer the surface; the self-evident reason of which is, that the deeper they are, the air is better excluded, and there is a more regular degree of moisture for the nourishment of the young fibres, when they make their appearance. I must also observe that no part of a shoot should on any pretence be covered with the mould, except that which is meant to produce roots, as the covering of the whole renders it extremely liable to rot; therefore, if any particularly tender plant should happen to be thus treated, it would evidently endanger the whole stool. This may seem an unnecessary observation to some, but I can assure such, that I have seen layers made by people, who thought themselves extremely clever, where none of the parent stool were left in sight, except the tops of each individual layer: what was the consequence? in a few months, one half at least of the stools were without the least spark of life remaining; and of the rest which were so fortunate as to survive, perhaps not one tenth of the shoots layed, produced plants.—Hort. Cabinet.

# ART. III. - Acclimation of Plants.

This is a subject of much importance to farmers, but one which is very little attended to. Every one knows that different latitudes have their respective vegetable products, and although it is perhaps impossible to draw the dividing line where they cease or begin to grow, yet by progressing North or South we ultimately come into a region where one species is not found and the other is. Thus the apple and the pear may be found in high latitudes, and yet they flourish more and more indifferently as you proceed south, till you arrive at a point where they do not flourish at all. Some plants are so constituted that they will conform to different climates very easily, while it is probable that others would take hundreds of years of care and attention to bring them so as to endure a different climate from the one they were produced in.

Still, however, much may be done by selecting such plants as it is wished to transplant, from one region to another, from situations as near as possible as it regards temperature, &c. as the region to

which it is proposed to transplant it. Thus if it is to be carried from a warm climate to a cold one, it should be taken from the north side of some hill, or if mountains are near, from as high an elevation as it could possibly be found. On the other hand, if the plant is to be carried from a cold to a warm climate in order to enable it to sustain the climate and preserve its natural properties, it should be taken from as warm a situation as possible. If our seamen and travellers would attend to these circumstances there is no doubt that success would more often attend their endeavors to benefit mankind in this respect. Nor is this rule a useless one in transplanting trees, &c. from one situation to another in their own neighborhood. Of two evergreens of the same species, one of which was taken from a shady damp situation, and the other from a dry and exposed place, and both removed to a garden of comparatively dry soil, the latter lived, while the other soon died. Circumstances may vary in regard to this rule, but we believe it a good one to follow. Every one will find by a little observation a difference in the texture of the same species of trees, arising from difference of structure or growth. Thus of two beeches or oaks, one growing in a thick and shady forest, and the other standing alone in the open field - the latter will be much the toughest and strongest. "Pasture beech," and "pasture oak," are terms often used to recommend any implement made of them - denoting more strength and durability than if they had grown in a more sheltered location. From these considerations we have no doubt that apples, pears, and other trees from a nursery in an exposed situation would, on the whole, be more sure to thrive than those from a warm one. And in obtaining trees, &c. from other places, due regard should be had to the situation - habits - mode of treatment, &c. which they have been used to, and that which they are to receive, and not have the transition from one extreme to the other, too great and too sudden. - Genesee Farmer.

ART. IV.—On the Culture of the Camellia. By a London Practical Gardener.

This very popular family, has always the best effect when cultivated in a house by themselves; and as there are certain seasons in

which this genus requires a treatment almost peculiar to itself, their separate culture is, therefore, the more necessary. The splendor and profusion of the blossoms of this genus do not only attract our notice, considered merely as an ornamental plant, but has a considerable claim on our more intimate regard, when we consider it as supplying us with one of the necessaries of life, and probably one of the most exhilarating and useful medicines of which our Pharmacopeias can boast. From the species Camellia bohea, viridis, and sasangua, are obtained the well known tea of commerce, which is imported to us from China, where these three species, together with C. Japonica, grow in abundance, and in that country attain the character of evergreen shrubs or low trees. From these species have been originated, by cultivation, the many varieties now cultivated. The most successful and generally adopted method of propagating this family, is by inarching or grafting; by either of these modes each variety is perpetuated, but new varieties are only to be obtained from seeds; as these seldom ripen, at least in any quantity, in this country, and few are imported in fit state to vegetate, the propagation of new varieties is consequently a matter of some importance. As, in most other cases, it is from single flowering plants that seed are to be expected, although sometimes the semidouble flowers also produce them, and of these, the common single red is the most prolific in affording seed. Sometimes seedlings so obtained are used only for stocks, whereon to work other rarer kinds, although sometimes they are kept till they attain a flowering state to ascertain their relative mints. Mr Knight, of the Exotic Nursery, has many seedling plants thus originated, which assume as yet different characters, so far as the buds, leaves, &c. are concerned, from those from which they have sprung; and, under the management of that very scientific cultivator, every justice may be expected to be done them. These we understand, have been principally obtained from the magnificent specimen he so long and so well cultivated, and to which we have already alluded. Stocks, however, are for the most part obtained by nurserymen from layers of the simple red, which they have often planted out in pits for this purpose, or from plants originated from cuttings of the same or equally common sorts. Camellias are sometimes budded, but for the most part are either grafted or inarched; in either case, the process of tongueing is dispensed with as weakening the stock; and

that mode of grafting, termed side-grafting, is preferred. It may be observed, that, of all the stocks, for this or any other purpose, those obtained from seeds, are the best; but in regard to Camellias, as the seeds are two years in coming up, cultivators seldom wait till such stocks are of proper size to be operated on. Sometimes the double Camellias are obtained from cuttings, but this is both a tedious and precarious method of increasing them.

As to the proper season for grafting or inarching Camellias, the spring is the best, and just at that time when the plants have done flowering and are beginning to grow. This state of vegetation does does not always take place at precisely the same time, as some cultivators force their Camellias into bloom very early; such, therefore, should be operated upon not by the exact period of the year, but by the state of the plants. Some will be fit for this process in January, February, March and April. Those, however, which are operated upon in March and April, will have the better chance to succeed, although those which are operated on in February answer pretty well.

During the time the process is going on, the house should be kept rather closely shut up, and the atmosphere rather damp; however, these must not be too freely indulged in as in the former case, the plants would be liable to being drawn up weak, and consequently become straggling and of bad habits. The time that elapses before a union of the scion and stock completely takes place is in different sorts, and more particularly in regard to the state of health and vigor in which the plants may be, as well as the favorableness or unfavorableness of the season. Observation alone can dictate when the clay, and afterwards the bandage of matting, should be removed. There is an evil in allowing either to remain on too long, as well as taking them off too soon; however, there is less danger to be apprehended from their remaining on a week or even two too long, than in taking them off a week too soon. Some cultivators adopt the Graffe Blaikie mode of inarching with much success, and others also practise the mode recommended by Mr Murray, of Glasgow, by inserting the lower extremity of the scion into a potato or small turnip. Camellias will form a union when the branches are of considerable size; and, as we have already noticed, very large plants may be speedily formed by inarching several whole plants upon one common stock. This process is now becoming

prevalent round London; and when the operation is properly performed, and the plant afterwards properly cultivated, specimens of large size may be expected to become more common than they have hitherto been; and certainly one or two large specimens of this plant, where there is convenience for keeping them, are better than a number of small ones, which will take up the same room, and never can produce so imposing an effect as is the case with large specimens. Upon one or two plants may thus be cultivated the whole collection of varieties and species now known. In grafting the Camellias, much care should be taken to perform the operation neatly, so as to leave as little appearance of the place of union as possible. I recollect, when this plant was much less common than it now is, and the method of propagating it less understood, that some cultivators, to hide its deformity in the stem, performed the operation very close to the surface of the pot in which the stock grew; and when the union had taken place completely, they used to repot them into deeper pots, so as to bury the wounds under the mould. A practice so unskilful was of course unsuccessful; the plants being thus too deeply potted did not prosper, and, as might be expected, deterred many from purchasing, from an idea that the plants were either short-lived, or would not grow without the care of a proficient person. The care, however, is otherwise; scarcely any plant is easier than the Camellia; although it must be admitted, that, to grow them in the first degree of excellence, much judgment is required. Camellias, like most other plants, have their periods of growth and also of rest; during the former state they cannot hardly be watered over much, and during the latter, they will soon languish if too bountifully supplied. For this, no rules can be laid down; experience and observation on the part of the cultivator alone can be a safe guide.—Hort. Cabinet.

# ART. V .- Description of Peas.

The following description of the different varieties of Peas with their synonymes, from the Transactions of the London Horticultural Society, will be found of great use to Seedsmen, and be interesting to horticulturists generally. It was drawn up by Mr George

Gordon, undergardener in the kitchen garden department. All the varieties of the pea have been grown in the Horticultural Society's garden, and they are arranged by Mr Gordon into the following groups:

- "I. Common Dwarf Peas. With small roundish pods, white peas and stems, not more than three feet high.
- "II. Common Tall Peas. With round pods, white peas and stems, requiring sticks.
- "III. Dwarf Marrow Peas. With broad pods, peas particularly sweet when young, and stems not more than four feet high.
- "IV. Tall Marrow Peas. Like the last, but with stems requiring sticks.
- "V. Sugar Peas. With pods destitute of the usual tough lining, and eaten like kidney bean pods: the peas white.
- "VI. Imperial Peas. With the strong growth of the marrow, and the small round pods of the Prussian.
- "VII. Prussian Peas. With the stems branching very much, and roundish, not very large pods: the latest of any class.
- "VIII. Grey Sugar Peas. With pods like those of the fifth class, but with flowers of a purplish color, and peas spotted, or any other color but white.
- "IX. Grey Common Peas. With purple or white flowers, and peas any color but white.

#### "GROUP I.—COMMON DWARF PEAS.

- "1. Bishop's Dwarf. About two feet high, and of strong growth. Pods short and broad, mostly containing four or five peas. Only a moderate bearer, a week later than the early frame, and hardly worth growing.
- "2. Early Dwarf. Height about one and a half feet, and somewhat resembling the preceding variety, but is more prolific; broad, mostly containing five peas. It is the best of the dwarfs, as it is very prolific, and of good quality.
- "3. Dwarf Brittany. About six or eight inches high, of a dark green color, and of slender growth. Pods small and nearly round, mostly containing five peas. It is a few days later than the preceding, and is very fit for late sowing, and is a good bearer.
- "5. Common Spanish Dwarf.—Synonymes: New early Spanish dwarf, Spanish dwarf or fan, dwarf bog, Knox's dwarf.—About two feet high, and of strong growth. Pods rather broad, flat, and

not very long, mostly containing four or five peas. A moderate bearer, and a few days later than Bishop's, which it somewhat resembles. Mr Bishop selected his pea from this variety. (See Gard. Mag. vol. I. p. 127.)

"5. Large Spanish Dwarf.—About three feet high and very strong. Pods longer than the common Spanish Dwarf, and round, mostly containing five or six peas. Like the preceding, only a moderate bearer.

# "GROUP II.—COMMON TALL PEAS.

- "6. Early Frame.—Synonymes: Best early, early single blossomed, early double-blossomed frame, early dwarf frame, superfine early Batt's, early dwarf nimble, early Wilson, Young's very early, early Nicholas, Perkins' early frame, early Nana, Mason's double blossomed, Russell's fine early, early French, dwarf Albany.—About four feet high, and rather slender. Pods small and round mostly containing five or six peas. Very prolific, of excellent quality, and the earliest pea in the whole collection. The number of blossoms on this pea entirely depends on the soil and situation it is grown in. It must not be confounded with the early Charlton.
- "7. Early Charlton.—Synonymes: Golden Charlton, early sugar frame, late dwarf, Twesly dwarf, Hotspur, Wrench's Hotspur, double dwarf Hotspur, early Hotspur, golden Hotspur, common Hotspur, early Nicholas Hotspur, Nimble Taylor, very fine late garden, Paddington, Essex Reading, Russell's early blossomed. About five feet high and of strong growth. Pods large, broad, and rather flattened, mostly containing six or seven peas. A very prolific bearer, of excellent quality, and the best pea for standing the winter in the collection. It is about a week or ten days later than the early frame, and will continue much longer in bearing, and like the preceding, varies in appearance according to soil, situation, &c.
- "8. D'Auvergne.—About five feet high, and rather slender. Pods very long, nearly round, much curved, and tapering a good deal to the extremities, mostly containing eleven or twelve peas (if well grown.) A very abundant bearer, of excellent quality, and later than the early Charlton, in coming into use. It is the best pea for produce, and deserves to be generally cultivated in all gardens.
- "9. Eastern Shore.—About five and a half feet high, and rather slender. Pods small, short, and round, mostly containing four or five peas, a very abundant bearer; coming after the Charlton.

"10. Tall Frame.—About five and a half feet high, and rather slender. Pods small, round, and rather long; mostly containing six peas. Very productive, coming into use about the same time as the Charlton, to which it bears some resemblance, but is taller, and of slender growth.

#### "GROUP III.-DWARF MARROW FAT.

- "11. Dwarf White Marrow.—Synonymes: Glory of England, Wabash.—About three and a half feet high, and very strong. Pods broad, and not very long, of a dark green color, containing six or seven peas. Of excellent quality, but only a moderate bearer.
- "12. Knight's Dwarf Marrow.—Synonymes: Dwarf Knight's, Knight's new dwarf.—About three and a half or four feet high, very much resembling the dwarf white marrow, but of a stronger growth. Pods broad, and rather flat, containing five or six peas. Of excellent quality, and very prolific. The seed wrinkled when ripe.
- "13. Dwarf Green Marrow.—Synonymes: New green, early dwarf green, early green, new early green, royal dwarf marrow, new green nonpariel, Holloway marrow, new extra green marrow, Wellington, green Rouncival.—About four feet high, and of strong growth. Pods dark green, large, broad, and flat, containing seven or eight peas. Of excellent quality, very prolific, and rather late. Peas a light green color, and sometimes half green and half white when ripe.

#### "GROUP IV .- TALL MARROW PEAS.

- "14. Tall White Marrow.—Synonymes: Tall Carolina, large imperial marrow, new tall Temple, Olive, Wootten, large Carolina, white Rouncival.—About seven feet high, and of strong growth. Pods large, and very broad, containing seven or nine peas. Of excellent quality, very prolific and late. This is a very good pea for summer, but will not do without stakes.
- "15. Knight's Tall Marrow.—Synonymes: Knight's late.—About six and a half feet high, and of very strong growth. Pods large and broad, containing eight or nine peas. Of excellent quality, and later than the preceding by a week. Peas when ripe shrivel very much, and are remarkably sweet. This pea is the best of all the tall ones for late sowing in summer.
  - "16. Branching Marrow.—Synonymes: Donn's new, prolific

Isle of France.—About five and a half feet high, and of very strong growth. Pods large broad, and rather flat, containing eight or nine peas, of excellent quality, large, and very prolific. Peas when ripe of a yellowish green color.

- "17. Tall green marrow. Synonymes: Green tall, new large green, imperial green. About 7 feet high, and of very strong growth. Pods large, broad, and rather flat, containing 8 or 9 peas, of excellent quality, late, and very prolific. Peas when ripe, of a yellow green color.
- "18. Egg. Synonymes: Large egg or bean, Patagonian. About  $7\frac{1}{2}$  feet high, and of a strong growth. It greatly resembles the tall white marrow, but the peas are much larger and not so round; in other respects nearly the same.
- "19. Waterloo. Synonyme: Nonpariel. About 6 feet high, and very strong. It has a great resemblance to the tall green marrow, but it does not grow so tall nor so strong. Peas green and rather wrinkled.
- "20. Pearl or Nonsuch. About 9 feet high, not of very strong growth, and bearing some resemblance of the tall white marrow, but the pods are rounder and much smaller. Of good quality, but a moderate bearer.
- "21. De Guiverigny. About  $4\frac{1}{2}$  feet high, of very strong growth, and resembles the dwarf white marrow, but much taller, and the pods are rounder; in other respects nearly the same.
- "22. Crown Pea. Synonymes. American crown, rose or crown. About  $5\frac{1}{2}$  feet high, of very strong growth, with the blossoms in talis at the extremity, somewhat like a crown (from which it derives its name.) Pods small, round and straight, containing 4 or 6 peas. A very abundant bearer, of good quality, and very good for summer use.
- "N. B. Nos. 20 and 22 should, perhaps, be referred to the second Group; but, on account of their strong growth, I have placed them in the 4th Group; they differ from it only in having small pods; and from the second Group in growing very strong, and being late.

#### GROUP V. - SUGAR PEAS.

"Large Crooked Sugar. Synonymes: New pea, sugar pea, broad sword, early Spanish. About 9 feet high and very strong. Pods very large, broad and much twisted, containing 9 peas. Peas

large, and very prominent in the pods. Of excellent quality, very productive, and the best in its class.

- "24. Vilmorin's Sugar. About  $6\frac{1}{2}$  feet high, and of slender growth. Pods small, round and straight, containing 7 or eight peas: which, as in all other sugar peas, are very prominent, even when quite young. Of excellent quality, and the greatest bearer in the class. It was received from M. Vilmorin as 'espece de pois tres excellent.'
- "26. Alberjas. About 6½ feet high, and of strong growtl.. Pods small, round, and straight, containing 7 or 8 peas, of excellent quality, and very prolific. It was brought from Mendoza, by Dr Gillies. There is sometimes a very thin skin inside the pods of this sort, which makes it distinct from all others in the class.
- "26. Tamarind Pea. Synonyme: Large dwarf Sugar. About 4 feet high, and of robust growth. Pods large, broad, and much curved, containing 9 or 10 peas. Of excellent quality, and a very abundant bearer. The pods are from 4 to 5 inches long, and are produced the latest in this class.
- "27. Early May Sugar. Synonymes: Early Dutch, early sugar, dwarf Dutch Sugar. About 4 feet high and very slender. Pods small, round and straight, containing 6 or 7 peas. Of good quality, but only a moderate bearer. This is the earlierst pea in the collection, but is very tender, and will not do to sow before the beginning of March.
- "28. Dwarf Sugar. Ledman's dwarf. About 3 feet high, and of very strong growth. Pods long, nearly round, and slightly curved, containing 7 peas. Of excellent quality, a moderate bearer and late.
- "20. Dwarf Dutch. Synonymes: Dwarf sugar de Grace, early dwarf de Grace, dwarf crooked sugar. About  $2\frac{1}{2}$  feet high, and of slender growth. Pods rather short, small, and crooked, containing 5 peas. Of good quality, only a moderate bearer, and later than the preceding by a week.
- "30. Late Wyker Sugar. Synonyme: Late white sugar. About  $6\frac{1}{2}$  feet high, and of very strong growth. Pods roundish, small, and much curved, containing 7 or 8 peas. Of excellent quality, a good bearer, and very late.
- "N. B. The pods of all the peas belonging to the 5th Group should be gathered when quite young, like French [string] beans, and cooked after the same manner, without being shelled.

#### GROUP VI. - IMPERIALS.

"Dwarf Imperial. Synonymes: Imperial, blue imperial, dwarf green imperial, and long podded imperial, Summatra, green nonpareil, dwarf blue prolific, blue scimeter, sabre, blue sabre, new sabre, dwarf sabre. About 4 feet high and of strong growth. Pods large, long, and rather flat, much pointed, and containing 8 or 9 peas. Of excellent quality, a good bearer, and one of the best peas for summer, as it is very late coming into use.

"32. Tall Imperial. Synonymes: Tall green imperial, tall blue imperial, Spanish patriot, new tall imperlal, blue union, green nonpareil, tall Prussian or blue union. About 7 feet high, and rather slender. Pods broad, and rather short, but not pointed like those of the preceding, and containing 6 peas in a pod. Of good quality, and very productive, but not so late as the last.

#### GROUP VII. - PRUSSIANS.

- "33. Blue Prussian. Synonymes: Dwarf blue Prussian, royal Prussian blue, fine long podded dwarf. Prussian prolific, early Dutch green, green Prussian. About  $3\frac{1}{2}$  feet high, and of strong growth. Pods long and rarber round, containing 8 peas. This is so well known that it is quite useless for me to say any thing about its good qualities. It is undoubtedly the best for summer use, and one of the greatest bearers.
- "34. White Prussian. Synonymes: Prolific, or poor man's profit, prolific, tall Prussian, dwarf white Prussian, new dwarf Norman, royal dwarf, royal prolific, dwarf Tewsley, Stowe pea. About 4 feet high, and very robust. Pods broad, long, and rather flat, containing 7 or 8 peas, which are large and white, of good quality, and, like the blue Prussian, an excellent summer pea, and very prolific. This is the best sort for general cultivation, and well deserves the name of poor man's profit; but it will not remain so long in bearing as the blue Prussian.
- "35. Groom's Superb Dwarf Blue. About 18 inches high, and of robust growth. Pods large, round and rather flat, containing 8 or 9 peas. Of excellent quality, a very abundant bearer, and a few days later than the blue Prussian, of which it seems a distinct dwarf variety. Raised by Mr H. Groom of Walworth, who sent seeds of it to the garden, in 1831. This deserves general cultivation, as it requires no sticking, and produces more on the same space of ground than any other of the dwarf sort.

#### "GROUP VIII. - GRAY SUGAR PEAS.

- "36. Purple Podded Grey. About 7 feet high, and of robust growth. Pods short, broad, and rather pointed, of a deep purple color, containing about 5 or 6 peas. A good bearer. The peas when boiled are rather bitter; but, if cooked like the pods of the scarlet runner kidney bean, it is very good.
- "37. Red flowered Sugar. About  $6\frac{1}{2}$  feet high, and of slender growth. Pods long, nearly round and straight, containing 6 peas. Like the preceding, it is only fit for use when quite young. A good bearer, but not fit for field culture.
- "40. Late Grey. Synonymes: Tall grey, tall Capucine, large grey. About 8 feet high, and very robust. Pods broad, but not very long, containing 7 or 8 peas of a yellowish brown color, black eyed and large. A good bearer.
- "41. Maple Gray Pea. Synonymes: Marlborough, partridge grey. About  $7\frac{1}{2}$  feet high, and very robust. Pods broad and rather long, containing 7 or 8 peas, which are like those of the preceding kind, but much smaller, and not black eyed. This is a good bearer, and the flowers are much lighter colored than those of No. 40.
- "42. Spanish Marotta. Synonymes: Tall black spotted marotta, black spotted. About 6 feet high, and rather slender. Pods small and nearly round, containing 7 peas, of a yellow color, black eyed, small and round. It is very productive, and tolerably good if gathered when young, as it is by no means so bitter as the other grey peas when boiled.
- "43. Bean Pea. Synonymes: Funnel's black spotted. About 8 or 9 feet high, and very robust. Pods long, broad, and not much pointed, containing 9 or 10 peas, of a yellowish white color, black eyed, and having some resemblance to small horse beans when ripe. It is very productive, but only fit for field culture, as it is rather bitter when boiled, although not so bitter as grey peas in general.

# ART. VI. - List of Climbers for the Green House.

The selection given below, with the remarks appended, will be found of great assistance to those who are wishing to plant creepers, and have not the opportunity or convenience of any ready reference, or are not acquainted with these kind of plants. They are so arranged that a selection of colors may be made for any month or number of months, when a good show of flowers is a matter of importance.

Plants coming into flower in February.

Maurandia antirrhinistora, M. Barclayana, M. Semperstorens. These will either do for pillars or trellis; they flower freely from this time till October or November.

Passiflora cærulea — racemosa — blue. This sometimes flowers in June.

Plants coming into flower in March.

Brachysema polymorpha. This plant I do not know. It is recommended to me as excellent for a pillar.

Kennedya cordata, purple fl. Does not climb so quick as some kinds, but makes a good show.

Keneedya Comptoniana, blue fl. K. dilatata, purple fl. K. heterophylla, purple fl. K. inophylla, scarlet fl. K. Monophylla, purple fl. K. prostrata, purple and red, K. nigricans, dark purple, K. rubicunda, brownish red. These are all very handsome, and when the height is not great they will soon cover the pillars against which they are planted.

Ruscus androgynus, green and yellow. A very curious plant.

Plants coming into flower in April.

Rodochiton volubile, dark purple. A fine new crceper, nearly hardy.

Tropæolum, orange fl. K. polyphyllum. Both these grow very rapidly, and flower very freely in April.

Bignonia capensis, orange. Continues flowering from April down to the beginning of September.

Clematis Massoniana, white fl. Comes into flower towards the end, or early in May.

Brachysema latifolia, scarlet. Is fond of heat but will thrive well in the green house.

Podolobium scandens, yellow. Continues flowering till June.

#### Plants coming into flower in May.

Billardiera angustifolia, yellow. Continues flowering till August. Billardiera longifolium, crimson. A very free flower, and quick grower.

Caprifolium, scarlet. Flowers most of the summer.

Chæscandens, blue purple. Flowers all the summer.

Jasminum odoratissimum, yellow. J. volubile, white. Both excellent climbers, well suited for trellis.

Kennedya coccinnea, scarlet. Very showy when a fine plant.

Fuchisia macrostemma, scarlet. F. gracilis, scarlet. These are not properly creepers, but they look well trained to a pillar.

### Plants coming into floawer in June ..

Manettia cordata, scarlet. Beautiful new plant, fast grower.

Bignonia grandiflora, orange. Requires a good deal of room.

Combretum farinosum, orange. Does well on a trellis.

Fuchsia microphylla, red. Suited for training either on trellis or pillar.

Glycine heterophylla, yellow. Suitable for trellis rather than pillars.

Jonesia scandens, orange. Very good for trellis in a warm place. Clematis odora, white. Rather scarce.

Lophospermum erubescens, rose. Excellent for pillars.

Sollya heterophylla, blue. S. angustifolia, blue. The rich blue of the flowers, and the graceful manner in which they hang, render these plants very desirable.

Passiflora alato—cærula, rose. These two Passifloras are similar in the color of the flower, and are both very fine.

# Plants coming into flower in July.

Glycine argenta, yellow.

Eccremocarpus scaber, orange red. E. longiflorus, yellow. Two fine plants for pillars.

Bignonia cherii.

MAURANDIA. — All these species of Maurandia are nearly hardy. They thrive freely in any light rich soil, and are propagated freely by seeds which they produce in abundance; cuttings of the young wood also grow, if planted in light soil, and plunged in a little heat.

Passiflora. — All the green house species of Passiflora require

to be planted in a mixture of loam and peat; they are very handsome; bloom very freely. They may be propagated by cuttings of the young and tender shoots, planted in light soil, and plunged in a little peat.

BRACHYSEMA. — The B. latifolia is a most beautiful plant for a pillar or trellis. It does well planted out in equal parts of peat and sandy loam from a pasture field. They are propagated both by layers and cuttings; the latter should be planted in fine white sand, and be covered with a glass.

Kennedia. — All the species recommended above require to be planted in a mixture of sandy loam and peat, in the proportion of two thirds the former to one third of the latter. Cuttings strike root easily, if planted in pots of light soil, and plunged in heat.

Ruscus androgynus. — Though many plants make a far greater show than this does, yet the curious manner in which its flowers are produced, and other peculiarities, render it well deserving a place in the green house. It should be planted in equal parts of peat and loam; and may be increased by divisions of the roots and suckers.

Rodochiton volubile. — There can be no doubt, but this, of all the known climbing plants with which we cover walls during summer, is the most remarkable and beautiful, and ought to be particularly recommended, as it is easily cultivated, and flowers so very freely. Its propagation is by seeds and cuttings. The seeds are sown in March and April, that the young plants may become strong enough in time for planting in the open ground, where they may remain during the whole summer until the frost sets in; if these plants are to be preserved, they should be potted off and put in a conservatory. They are also easily propagated by cuttings.

TROPÆOLUM. — The two species named above are very easy of culture, thriving in equal parts of peat and loam, and may be easily propagated by cuttings and seeds; the former strike very well with us, if planted in light soil or sand, and may be plunged in a little heat.

BIGNONIA. — The two species noticed should be planted in an equal mixture of peat and sandy loam. Propagated by cuttings of young wood, which should be planted in light soil, and plunged in heat.

CLEMATIS. — These will grow in any light rich soil, and may be propagated by cuttings.

BILLARDIERA. — These two species are of very easy culture, if planted in sandy loam and peat. They produce seeds, which should be sown in the spring; cuttings will also grow if planted in sand, and covered with a glass.

Podolobium. — The soil most suitable for them is two parts of very sandy peat, and one part of light loam. They are propagated by cuttings, taken off when half ripe, and planted in sand, and covered with a glass.

CAPRIFOLIUM. — These require the most simple culture; any light rich soil will answer for them, and they may be easily propagated by cuttings, taken off when half ripe, planted in sand, and covered with a glass.

COBÆ SCANDENS. — This species will soon cover a very large space in the green house; it produces an abundance of flowers, and in general, a plenty of seeds, by which it is easily propagated; it may also be increased readily by cuttings planted in light soil, and plunged in heat. Any rich mould will suit it.

JASMINUM. — These species may be planted in equal parts of loam, peat and leaf mould, or very rotten dung. They are very easily propagated by cuttings of the young and tender shoots planted in sand, and plunged in a little heat, under glass.

Manettia. — The species recommended is of very easy culture, and grows very rapidly. It strikes freely from cuttings planted in sand, and placed under a hand glass in heat. The soil is sandy loam and peat.

COMBRETIUM. — The species recommended as a green-house climber must be planted in a warm situation, or it will not prosper. It thrives in a mixture of loam and peat, and is propagated by cuttings planted in pots of sand, and plunged in heat.

GLYCINE. — These are of easy culture, growing freely in any light rich mould.

The G. SINENSIS is a delightful plant for the trellis of a conservatory; in the open air the flowers are liable to be damaged with the early spring fruits, but in a house it continues flowering all summer.

JONESIA. — This like the species of Combretium, must be planted in a warm situation in the green-house to do well; it thrives best in a stove. The mode of propagation is by cuttings, and the best soil is sandy peat.

LOPHOSPERMUM. — This free growing climber may be propagated from seed, or from cuttings.

Scllya. — These are nearly hardy, and if planted in loam and peat will thrive very vigorously. They are readily increased by cuttings, planted in sand, and plunged in a little heat.

# ART. VII. — Massachusetts Horticultural Society. EXHIBITION OF FRUITS.

SATURDAY, OCTOBER 29, 1836.

Pears. — By the Hon. John Lowell — Calebasse D'Hollande, the form that of a Calabash or gourd — a melting sweet fruit, but too ripe to judge precisely of its merits; Beurre Crapaud, a fruit of middle size and fine; a fruit supposed to be the Elton received of Mr Knight, of medium size, nearly round, of a green color, melting with an agreeable astringency; Sylvanche Verte, unripe; also the following kinds, all of which were received direct from the Chevalier Parmentier of Enghein; Bezi Vaet, Delices D'Hardenpont and Beurre Bronze, which are to be reported at a future day. (See the letter of Mr Lowell below.)

By Mr Manning — Green Pear of Yair, a good and celebrated Scotch fruit; Belle et Bonne, specimens melting and sweet but over ripe; Beurre Von Marum, a new and oblong fruit of a yellow color, melting, of superior flavor, evidently an uncommon fruit.

By Mr Vose, President of the Society — Fine Urbaniste, also, another fruit without name.

By the Messrs Downing of Newburg, New York — Fine specimens of St Michaels; also Bezi de La Motte, large and good, St Germain, Sylvanche, Gilogil, large and handsome and most esteemed as a baking fruit; also, Mabille, large and handsome, but not sufficiently mature for trial. The Mabille has been put down by some as a Synonyme of the Napoleon, but the form and color of this is different; also the Beurre Gris or Brown Beurre, very fine.

Apples. — By Dr E. Wight, of Dedham. Thin Skin a fruit so named from the thinness of its skin. This fruit is described as a very abundant bearer, and ripe from October to December, a fruit over medium size or rather large, of a white color, round but dimin-

ishing a little at the summit, Calville formed or ribbed at its sides, juicy, tender and fine and flavored with a good share of acid.

By Messrs Downing. Jonathan Apple, very beautiful but not yet mature; this is celebrated wherever known as a fruit of the very first quality; also the Dominie, a large fruit, roundish and flattened, the stalk very short in a deep depression, the eye sunk deep in a regular cavity, nearly the whole fruit covered with stripes of red, flesh yellowish white, breaking, saccharine, relieved by a just and due portion of acid, a celebrated and excellent winter fruit.

By Gorham Parsons, Esq. — Bellflower, very fine; also the Fameuse or De Neige, beautiful red without and snow white within, a fine fruit.

Plums. — Imperative Violette, a fine fruit, heretofore called in the vicinity of Boston and Salem as the Semiana.

### To the Committee on Fruits -

I send some specimens of new fruits, but no fair opinion can be formed of them this season as my ground has been as dry as ashes at the depth of two feet, as I found by trenching. The Capiaumont, Urbaniste and Seckel are hard and dry and mealy even.

1. Callebasse D'Hollande, its form shews it genuine, but it is dry and hard. 2. Beurre Crapaud, some have been fine. 3. Supposed Mr Knight's Elton. 4. Bezi Vaet, unripe. 5 Delices D'Hardenpont, do. 6. Beurre Bronze, do. 7. Sylvanche Verte, do.

Very respectfully yours, J. LOWELL.

Roxbury, Oct. 29, 1836.

I recommend the Beurre Knox as the best baking and stewing pear I know, it is a great and constant bearer and of noble size, juicy and sweet. It is not uniformly good for table, sometimes excellent.

### FRUITS AND FLOWERS.

SATURDAY, Nov. 5, 1836.

Pears. — By L. P. Grosvenor — Bell pear, St Michael, a fine sample.

By B. V. French - Wilkinson.

By Tho. Brown — a handsome pear for a name.

By R. Manning — Pope's Quaker, great bearer, fine for market; Wilkinson, small size; Nulli Secundem.

Apples. — By J. Morton — supposed to be Harvey Apple. By R. Manning — Rambo or Romanite; Coxe No. 26.

#### FLOWERS.

From Messrs Winship — Spirea Filipsendula; new Phlox; Lobelia syphiliticum.

### EXHIBITION OF FRUITS.

SATURDAY, Nov. 19, 1836.

Pears. — By Mr Vose, President of the Society — Duchesse D'Angouleme, Capiaumont, (now ascertained to be the Wurtemburg) Urbaniste, Napoleon, all fine specimens of the finest kinds. Also, St Michaels, very fine, an old fruit which is now but rarely seen.

By the Hon. John Lowell — specimens which were sent on a former occasion; Sylvanche Verte, now fully ripe and fine. Another supposed to be the Elton, received of Mr Knight — a round fruit and owing to the unfavorable seasons, unusually small — no judgment can therefore be formed of its merit. Also Beurre Bronz; a fruit received by him of Chevalier Parmentier of Enghein; size medium, owing to the late cold summer, not half the usual size, form regular, ovate, evidently a fruit that will last long, being yet immature; color, green, with patches of russet or bronze.

By the Rev. Dr Harris — Dix, from the original tree; a fine specimen, unusually oblong and somewhat over ripe.

By Jona. French, Esq. — specimens of a fine new kind, identical with other specimens, which were this day shewn.

By M. French — Capsheaf, very sweet and delicious. In favorable situations and seasons, this fruit attains to four times the size of the specimens seen today; and it proves a very profuse bearer.

By Mr Guild, from his garden, Brookline — several varieties, including the Crassanne and Holland Green.

By Messrs Downing of Newburg, N. Y. Mabille, the same which was noticed on a former occasion. A large and beautiful fruit, nearly resembling in its form a large Napoleon, and now nearly mature, beurre, of fine flavor: a very valuable kind. M. Noisette has indeed put down the Mabille as a a synonyme of the Napoleon. The form of the latter, like the Bon Chretien and the Bezide Chaumontelle is known to be variable and inconstant. But the perfect resemblance, in this specimen was not seen. Other specimens and a comparison of the tree and its leaf will at once decide how far M. Noisette is right in his decision.

Apples. — By Mr Grosvenor — Pomme Royal, sometimes called Pound Royal, a fruit originally brought by him from Connecticut, of very superior quality; large, round, pale greenish, white in the shade, with a few faint red stripes and deep red specks next the sun; the flesh white, tender, breaking, juicy, of a fine aromatic and delicious flavor, with a just proportion of acid; the pericarp large.

By Dr Ford, of Alna, Me. The following native varieties which were sent by him a few weeks since. Specimens not so large as in former years.

Golden Russet; a fruit so called, but differing from ours of that name; small, round, covered with golden russet; the flesh breaking and flavor good, a valuable winter fruit.

King's Pocket Apple; small, round, of a yellowish green at maturity, an autumn fruit; juicy abundant, of a fine sprightly and excellent flavor.

Baldwin, a variety so called, but differing from ours of the same name; Calville formed or ribbed, at the sides, a middle size red fruit, of flattened and irregular form, a winter fruit, of good flavor; but evidently would prove very fine in favorable seasons.

Haley; large, round and somewhat flattened; yellow with a faint blush, and now fully mature; flesh very tender, juice abundant, of a sprightly and excellent flavor.

Plummer Apple; of medium size, round and regular form; greenish yellow at maturity, with a faint blush next the sun; very sweet and fine; a valuable autumn fruit.

Spice Apple, so called, but differing from any of the same known with us; a small round and handsome fruit; the skin very smooth, of a bright yellow color, juicy and somewhat acid, but of good flavor. A winter fruit.

From the Rev. Hezekiah Ramsdale, of West Thomson, Conn. A collection of very beautiful and fine varieties were received as follows. Most if not all of which are understood to be good bearers.

Pomme Royal; of the same quality and kind as those which were exhibited this day by Mr Grosvenor; a most superior fruit, which keeps from December to May.

Large Red Sweet; a superb looking fruit; very large, round, somewhat diminishing towards the summit; color beautiful deep crimson, and covered while on the tree with a dense and blue bloom

like the blue Pearmain; flavor very sweet and rich. Though these specimens were now over ripe, the fruit may sometimes be kept till January.

Hollow Crown; large, yet but two thirds of the usual size in other years; round, the stalk short and but little depressed, the eye small, color yellowish green, covered for the most part with grizzly red, with a due portion of acid; the flavor fine; a fruit highly esteemed in those parts; it keeps till February.

Harvey; large, but not so large as usual; round, a little flattened; skin yellow, with patches thin russet, and occasional specks of deep red; an autumn fruit of excellent quality and flavor; sweet, relieved by a just portion of acid.

Chandler; large, flat and irregular in its form, and unlike another of the same name known with us, which originated in Chelmsford. The stalk very short and the eye very large, and each sunk in broad irregular cavities, the flavor good.

Reddick; rather small, round, color dark dull crimson; flesh very dense, flavor rich and good, a valuable fruit for keeping as it lasts till July.

Belle et Bonne; rather large flat, and irregular; Calville formed, with large projecting ribs; pale red, of excellent flavor; a fine fruit; November to January.

Large Red; a round and rather large fruit, but not half the usual size; covered for the most part with pale red on a foundation of pale green; with occasional stripes of deep red. The flavor decidedly good. The fruits keep till February.

Dr E. Ford is a gentleman, who aside from his extensive professional pursuits and practice, has spared no pains in collecting some of the best native kinds of fruit, known in Maine and in some parts of New Hampshire, and the kinds which he has so kindly sent as specimens, in this year so unfavorable for the production of good fruit, are all understoood to be good bearers.

The Rev. Mr. Ramsdale who has had the goodness to forward these specimens, has been for years an itinerant preacher of the Methodist denomination in several of the States, and has made it a particular object of his research, to collect some of the best native kinds which he could discover in the course of his extensive travels.

SATURDAY, Nov. 26, 1836.

The specimens of Fruits this day were all excellent, and as the season advances, the exhibitions become of more interest to the Horticulturist. The following were from Mr Vose, the President.

Duchess de'Angouleme, Capiaumont, or Frederic of Wertemberg, and Princess St Germain Pears.

Marigold, Bellflower, Hubbardston Nonsuch and Autumn Pippin Apples.

From Mr Manning; True Napoleon, Figure of Naples, Pears. The last past eating, and the Fall Harvey Apples.

From Col. Wilder; Columbian Virgalieu, procured by him, from Westchester County, N. Y. from the original tree.

SATURDAY, DEC. 10, 1836.

Pears by Col. M. P. Wilder. Youngs baking pear. Also Beurre d'Aremberg, large and excellent.

By Mr John Clapp. Culotte de Suisse.

By Mr. S. Sweetser. St. Germain, very large.

By some person nnknown. A small Bergamotte shaped pear, sweet and melting.

Apples by John Clapp. Baldwin; also a handsome large yellow Apple.

By L. P. Grosvenor. Spitzemburg and black Gillyflower.

(From the Farmers' Register.)

ART. VIII.—Remarks on the Wilcox Grape, and other Seed-lings.—By A. B. Spooner.

Observing in the last Register the request relative to native grape vines, I am induced to send you a piece of the vine of the Wilcox Grape, with a bunch or two-of the fruit attached thereto. It is a seedling — and the only vine known to be in existence, is now growing in the yard in front of the mansion house, at Walnut Hill, the country seat of Mr J. V. Wilcox, near this town. Mr Wilcox informed me, that the vine was found in the woods not far from the house, and he had it removed and planted where it is now growing. I tasted the fruit some years since, when the summer had been dry, and it was sweeter than the fruit now sent you. On

what I send you was all that remained. Mr Wilcox's servant had preserved a quantity of them in sugar, and sent me, he being absent, a tumbler full which were of very fine flavor. This variety deserves particular attention from its color, which is white, and from its sweetness — in other respects it very much resembles the wild summer grape, which ripens first in our woods. It is my opinion this variety would answer uncommonly well to put up in cotton, or sawdust, for winter use. I have made several unsuccessful attempts to propagate from this vine. Like many native varieties it is extremely difficult to raise from slips. I have had the slips sprout and grow till warm dry weather, and then die. I shall try ingrafting next year.

Among the varieties of American vines described by Prince in his Treatise on the Vine, I find no variety like this described, and among all the varieties not one in fifteen is white. The vine is said to have been heavily loaded with fruit this year, and I think, for eating, it is preferable to Norton's Seedling.

I will add a few remarks as to my experience in cultivating a few of the native varieties of the vine. The soil of my vineyards, on the Appomattox near town, is what is called, in Prince George, the mulatto soil, and is much stiffer than I would wish it to be for a vineyard. The white Scuppernong succeeds well and never rots or mildews. The same may be said of the "Alexander," and in this respect it seems to me that deserves cultivation in preference to the Catawba or Isabella. The Alexander is a large black grape, and when fully ripe is an excellent fruit. I am trying the experiment of preserving them in cotton for winter use. The Cattawbas and Isabellas have generally failed the present season in this part of the country, I presume on account of the extreme wet of the season. Some of the wild grapes in the woods rotted, apparently from the same cause. The Catawbas in my vineyard rotted equally as bad, if not worse than the Isabellas; and there were but few perfect bunches of the fruit of either kind on my vines. Those on the hill side, with a northern exposure, rotted worse than those on a level. A few years since, both of these kinds succeeded remarkably well in this part of the country. It seems to me, from rather a slight observation, that the same weather, which for three years past has blighted much of the wheat crop in this neighborhood, also produced the rot in the grapes. I have strong hopes, that when we are again blessed with a good wheat crop, the Catawbas and Isabellas will return into favor. But it is surely expedient to cut many of them down, and engraft on the stocks those varieties which never fail to ripen well. The Bland does not generally ripen as well as the Catawbas, and Isabellas on frames. The best I have seen this year, and in fact ever saw grow, are vines which run on trees.

Norton's Seedling is a great bearer, and has not rotted at all this year in my vineyard. But I consider it inferior as a table fruit. In that respect it will bear no comparison with the Catawba, Isabella, Bland, or Alexander. I have them now all ripe together, and can well form a proper estimate of the flavor of each kind.

I have a few more varieties which I have not tested, but they will bear next year. A few vines in the vineyard of the white, red, and black fox-grape, common muscadine, black Scuppernong, and Smart's Elsingburg, bear yearly, but they are in my estimation, hardly deserving the soil they occupy.

Feeling a deep interest in the extensive cultivation of the best varieties of native grapes, you will probably hear from me again.

Petersburg, Oct. 1, 1836.

ART. IX. — On the Culture of the Azalea. By Mr CH. VAN GEERT, Nurseryman and Florist, St. Willebrord, Antwerp.

The Azalea is a well known plant throughout Belgium, and forms one of the most splendid decorations of the flower garden. It is generally considered to be the most beautiful genus of the flowering shrubs. The neat form and bushy growth, the vast profusion of its flowers, the extensive variety and splendor of colors in the flowers, their appearance at a season when few other flowers are in bloom, and the little trouble which the plant requires when grown in a suitable soil and a good situation,— all combine to cause the plant to be much admired, sought after, and introduced into nearly every pleasure ground in Belgium.

The varieties of this handsome genus are very numerous, and have been raised in a short period. Twenty years since there were only a very few moderate species, having small insignificant flowers. Ten years since the A. pontica arrived in this country, and sold at a most extravagant price; its beauty being very highly extolled: this species became the parent of a vast variety.

I think it deserves to be recorded to the honour of a baker, one M. Mortier, that devoting his leisure hours to the study and pursuit of Horticulture, he, by impregnation of different kinds, was the first to raise not only the first hybrid, but nearly all the superb varieties which are now dispersed and cultivated so extensively throughout Europe. After having most successfully raised numerous varieties from A. pontica and calendulacea, he impregnated the A. pontica with the pollen of A. viscosa. This co-mixture afforded a greater reward than was anticipated, and the produce was the foundation of a new and very distinct section — that of the tardives. In this class is displayed all the variations of which the Azalea is capable, and it comprises those varieties which are most admired and esteemed by amateurs and gardeners. Having raised such an immense variety of kinds, and judging that as many were raised as could be classified, Mr Mortier resolved to give up hybridizing, concluding that to pursue the practice would only perplex the clasification. I observe however, that other persons have now taken up the practice, and some distinct and handsome varieties have been the reward of such attention.

In the commencement of the preceding observations, I stated that the genus Azalea required but little trouble when once properly planted. I shall, therefore, add some particulars respecting its culture.

Situation. If a garden be high and dry, select a situation where there is a very free admission of air, but it must be wholly shaded by trees or walls. If the garden be low and damp, select a situation where there will be the best circulation of air, and about half shaded.

Soil. Take out a foot deep of the natural soil of the place, and fill it with the following compost; — Leaves well decayed and rotten, and which have not been submerged. The best kind is produced from the Oak. If this cannot be had, take decayed turf, with a third part of that dry rottenness which is in trees, particularly in the trunks of old willows, and which has been well dried before using. Either of the above are good for the purpose, but I prefer the former. With either of them, mix a tenth part of sea sand for the humid situated garden or place, and the same proportion of a good

loamy soil, for a dry garden &c. In such a soil the plants will flourish so as to bloom amazingly.

Some taste as to arrangement of the kinds and colors is required, so as to produce the greatest effect; this the cultivator will doubtless attend to, so that a specifying of the kinds will be unnecessary for one to add. I shall, therefore, shortly send a list, with colors of flowers, height of growth, &c of the most superior kinds which I cultivate in my nursery grounds.

### ART. X .- Miscellaneous Articles.

HORTUS Siccus.-In studying Botany, it is of advantage to prepare a book of dried specimens of plants; such a book is termed Hortus Siccus, a dry garden. Choose from a plant a specimen having a flower, bud, leaf, and if possible a seed. Lay it upon thick blotting paper, placing one or two sheets of the same over it; upon which, unless the specimen be very succulent and thick, lay another specimen, and then more paper. Care must be taken to lay each part of the specimen smooth and flat upon the paper; no part of the specimen should be under another part; cut off any portion that is inconvenient to retain; if any bud or flower be too thick, pare off some of the under side to make them lie properly. When they are arranged, put a heavy weight upon them,after a few hours carefully shift the position of each specimen to a dry part of the paper, and replace the weight; repeat this, changing the paper if necessary until the specimen is perfectly dry. Prepare a solution of gum with a little camphor in it, and secure each specimen to a page in a folio of cartridge or white-brown paper; then write under each the name of the plant, class, order, tree, shrub, herb, country, &c. In the case of any specimen being very full of sap, a hot iron may be passed two or three times over the covering of the paper - taking care not to burn it.-Hor. Cabinet.

TULIPS.—The well known taste of the Dutch for Tulips is not diminished; the new Tulip called "The Citadel of Antwerp," has been purchased for 16,000 francs, (650 pounds sterling,) by an amateur at Amsterdam.—Ib.

Hot Water System of Heating Plant Houses, &c.—I have latterly seen an experiment tried in the use of glass tubes instead of the cast iron ones, which answered far better in all respects, giving out the heat much quicker, affording a higher temperature, and retained it for a larger period. The glass was of the commonest kind and quite cheap. It had a very neat appearance. I will obtain the particulars of cost and construction, for a subsequent number of the Cabinet.—Ib.

Fuchsia Discolor possesses one strong claim to our attention, inasmuch as it is a native of the most southern portion of the world, which has yet been visited by any Botanist, Port Famine, in the strait of Magelhæns, whence seeds were procured into this country. The country and hills, from the height of 2000 feet above the sea to the very verge of the high water mark, are covered with a perpetual verdure, which is remarkably striking, particularly in those places where the glaciers descend into the sea. The sudden contrast in such cases presenting to the view a scene as agreeable as it seems to be anomalous. I have seen vegetation thriving most lux. uriantly, and largely woody-stemmed trees of Fuchsia and Veronica, in England considered and treated as tender plants, in full flower within a very short distance from the base of a mountain covered for two-thirds down with snow, and with the temperature at 36°. The Fuchsia certainly was rarely found but in sheltered spots, but not so the Veronica (V. decussata) for the breaches of the Bays on the west side of St Johns Island, at Port Antonia, are lined with trees of the Veronica growing even in the very wash of the sea-There is no part of the strait more exposed to the wind than this, for it faces the reach to the west of Cape Forward, down which the wind constantly blows, and brings with it a succession of rain, sleet, or snow; and in the winter months from April to August, the ground is covered with a layer of snow from six inches to two or three feet in depth. There must be some peculiar quality in the atmosphere of this otherwise vigorous climate, which favors vegetation; for if not, those comparatively delicate plants could not live and flourish through the long and severe winter of this region.—Ib.

NEW PETUNIAS.—We have recently seen two very handsome varieties of Petunias, which have been raised in Germany, viz., one flesh-colored, and the other white with a darkish eye. Both are very desirable varieties, making a pretty contrast with the other

kinds. We saw also a splendid hybrid Alstræmeria, with flowers near four inches across, it has been raised from seed saved from Apelegrina. The flower is a fine fresh color, marked very strikingly with rosy crimson. The latter is not yet offered for sale.—Ib.

New Method of Drying Plants.—Dr Hunnefield recommends a new method of drying plants, by covering them first with the powder of lycopodium, and the placing them in a vessel containing chloride of calcium. By this method the color and flexibility are preserved. On the 29th of July, 1831, the thermometer being at 53½, Dr Coppert of Breslaw, placed in a twentyfour ounce glass, two leaves of the hyacinth, and a specimen of the Fumaria officinalis, with two ounces of muriate of lime, in such a manner that the plants were not in contact with the salt. On the following day the leaves began to dry, and on the 3d of August, although not dead, the hyacinth leaves were capable of being reduced to a fine powder. Even fleshy plants, as the Sedum rupestre, are so dried in seven days, that they may be pulverized. The lycopodium powder prevents the sap from escaping.—Botanical Garden.

Transmitted Plants. — From the mismanagement of house plants which have been transmitted a considerable distance, however carefully packed, some of the more delicate sorts are occasionally liable to perish, soon after their arrival. A little proper care bestowed upon them for a few days will prevent to a considerable extent, this loss. Nurserymen, from their experience, know well how to select plants in such a state of growth as are most likely to endure the vicissitudes of a journey, as well as the requisite mode of packing for safety for transmission; but frequently from the nature of the package, and various means of conveyance, the plants are, during their journey, nearly excluded from air and light, and arrive at their destination in a weakened state; unable, at first, either to endure the rays of the sun or a free current of air.

By immediately placing such plants in full exposure in the houses, where they are to remain, many losses will oftentimes ensue.

To prevent this, all that is requisite is, that upon being unpacked, the plants be placed in a part of the house where there is no draught of air, but plenty of light; and where they will be entirely shaded from the sun. They should be watered but seldom, and it should be given in small quantities. In a week or ten days they will have so far recovered that they may be placed amongst other plants

where they are to remain. Hardy trees, shrubs, herbaceous plants, when removed to a distance, during winter, seldom require any particular care, for their being in a dormant state, unless they have been very long confined in the packages, in which case all that is necessary is to throw a little soil over their roots, in temporary manner, in a sheltered situation, and cover them with a mat for a few days previously to their being planted. When herbaceous plants are removed during summer, they soon become weakly, and require to be potted, and placed in a shady situation; either in a cold frame, or beneath hand glasses, till they have taken root; when they may be gradually hardened, and finally turned out of the pots into the places where they are to remain.—Ib.

DEATH OF JUSSIEU. Antoine Laurent de Jussieu, the celebrated botanist, and the founder of the natural system of botany, which has now supplanted that of Linnæus, lately died in France. An English journal, consecrates the following brief memoir to his memory.

"Called at the early age of twenty-two to assume the duties of Botanical Demonstrator in the Jardin du Roi, in room of Lemounier, the physician of Louis XVI. Jussieu was led from the very beginning of his career to occupy himself with the affinities and analogies of plants; and he speedily acquired a knowledge of such subjects far beyond that of his day. He saw clearly that the artificial system of Linnæus was more specious than solid; and that it had the intolerable fault of leading those who adopted it to a superficial and unphilosophical mode of studying. At the same time he was not less alive to the defects of the systems of his countrymen Tournefort and Adanson, which were the only natural methods of arrangements at that time known; for the works of Ray, upon which they were founded, had become obsolete. This led Jussieu to investigate for himself the principles upon which the mutual relation of plants are to be determined; and, after nineteen years of study, he found himself able to lay before the world his ideas in his celebrated 'Genera Plantarum,' which at once elevated its author to the highest rank among botanists, and created a new era in science; for it reduced to a definite form all those important circumstances upon which natural affinity depends, and proved that the points which Linnæus had found inappreciable and intangible, were susceptible of being clearly stated and methodically disposed. The possibility

of doing this had been generally disbelieved, and that was one of the greatest causes of the slow progress of systematic botany previous to 1789, the year in which the 'Genera' appeared. From that forward it advanced with rapid strides in those countries where men were to be found capable of appreciating the profound views of its learned author. In England, it met with little notice till the year 1810, when Brown's Prodromus of the New Holland Flora was ushered into the world; up to that time Botany, under the evil influence of a self-created leader, was with us in a state of torpor. As soon as the principles of Jussieu and his follower Brown began to become known, they spread rapidly in this country, and the science from that period began to revive. The 'Genera Plantarum' was the only special work that its author ever published. All that he subsequently produced consisted of separate memoirs upon parts of his great work, in which he altered, or added to what he had therein stated, or proposed improvements, as his sources of knowledge became more extended. For many years he has been dead to science, in consequence of the failure of his eyesight; and has been occupied in an attention to his duties in private life, while his chair of botany has been worthily filled by his son, who inherits the talent and reputation of his father. The last illness of Jussieu was sudden and short; his body was already bowed down with the weight of years; his hearing as well as his sight had failed him; although his faculties are said to have otherwise remained but little impaired; and, at last, to use the words of a correspondent, 'sa mort fut moins un malheur qu'un apotheose.' After the manner of the French, a funeral oration was pronounced over his grave; and Mons. Mirbel, to whom this sacred duty was intrusted, is said to have performed his melancholy task with an eloquence, good taste. and feeling, most worthy of his own high reputation."

### HYMN TO THE FLOWERS.

BY HORACE SMITH.

DAY stars! that ope your eyes with morn to twink?

From rainbow galaxies of earth's creation,

And dew drops on her lovely altars sprinkle

As a libation!

Ye matin worshippers! who, bending lowly Before the uprisen sun, God's lidless eye, Throw from your chalices a sweet and holy Incense on high!

Ye bright Mosaics! that with storied beauty
The floor of nature's temple tesselate,
What numerous emblems of instructive duty
Your forms create!

Neath cloistered boughs each floral bell that swinget And tolls its perfume on the passing air,
Makes Sabbath in the fields, and ever ringeth
A call to prayer!

Not so the domes, where crumbling arch and column, Attest the feebleness of mortal man; But to that fane most catholic and solemn Which God hath planned!

To that cathedral boundless as our wonder,
Whose quenchless lamps the sun and moon supply,
Its choir the winds and waves, its organ thunder,
Its dome the sky!

There as in solitude and shade I wander,
Through the lone aisles or stretched upon the sod,
Awed by the silence reverently ponder
The ways of God!

Your voiceless lips, oh flowers, are living preachers, Each cup a pulpit, and each leaf a book, Supplying to my fancy numerous teachers From loneliest nook!

Floral apostles! that in dewy splendor,
"Weep without sin and blush without a crime,"
Oh! may I deeply learn and ne'er surrender
Your love sublime!

"Thou wert not, Solomon, in all thy glory,
Arrayed," the lilies cry, "in robes like ours:"
How vain your grandeur! oh, how transitory
Are human flowers!

In the sweet scented pictures, heavenly artist!
With which thou paintest nature's wide spread hall,.
What a delightful lesson thou impartest
Of love to all!

Not useless are ye, flowers! though made for pleasure; Blooming o'er fields and wave by day and night From every source your sanction bids me treasure Harmless delight.

Ephemeral sages! what instructors hoary,
For such a world of thought could furnish scope,
Each fading calyx a "memento mori"
Yet fount of hope!

Posthumous glories! angel-like collection,
Upraised from seed or bulb interred in earth,
Ye are to me a type of resurrection
And second birth.

Were I, oh God, in churchless lands remaining.
Far from all teachers and from all divines,
My soul would find in flowers of thy ordaining.

Priests, sermons, shrines!

# MORTICULTURAL REGISTER.

AND

## GARDENER'S MAGAZINE.

FEBRUARY 1, 1837.

ART. I. — Horticulture — Common Cabbage, Early York Cabbage, London new York Cabbage, Savoy, Broccoli, and Early White Warwick Pea. By Mr Towert, Author of the Domestic Gardener's Manual, &c. C. M. H. S.

(Continued from page 7.)

To sum up the chief points of cabbage-culture for spring and summer main crops, it must be observed that the period of sowing should be strictly attended to: the seed-beds are to be slightly hoed to keep the ranks clear of weeds; the stronger plants are to be timely removed to the final beds, wherein two autumnal hoeings and a moderate earthing up must be given during the progress of growth. On the approach of spring, the intermediate spaces are to be digged or forked, after the removal of the inert leaves, and the operation should be repeated when the plants evince the tendency to fold up their inner leaves for hearting. By a careful attention to these needful processes, a bed of fine cabbages will, in favorable seasons, be secured. Having thus dwelt so minutely upon the routine culture of the cabbage for the main spring and summer supply, I shall only allude to that part of the treatment of succession crops, which refers to the summer and autumnal months.

It is usual to give directions for sowing the seed at several distant periods; but my object is to obviate trouble, and to simplify opererations as much as possible; and as I have proved that, by attentive management, a regular supply of fine plants may be obtained from one extra sowing, I shall presume that an extensive seed-bed or plot exists, having been prepared late in March or early in April.

The mode of culture will be understood by the directions already given: what, therefore, remains to be said, will apply to the order of routine which ought to be observed subsequent to the first of June. At that time, we may suppose that the greater part of the cabbages have been cut, the stems remaining being left for the production of sprouts. The seedlings of the April bed that are in a state to be transplanted, should be carefully selected, and set in a bed of rich soil, watered, and attended to in every respect as were those of the spring crop. This first bed, with the cuttings of the sprouts and the other shoots yielded by the old stems, will produce an ample supply of a second crop during July and August. After the removal of the seedling plants, those which remain in the seedbed should be gently lifted and replaced, but at regular distances three or four inches apart; the ground should be moved, cleared of weeds, made level, and well watered if the soil be in a dry state. Should the plants be very numerous, a hundred or two of the best might with great advantage, be moved to a succession bed to stand in rows, six inches apart, plant from plant. Thus they will acquire stocky roots, and be checked for a time; while the seedlings will gain strength from the additional space afforded them. If a bed be formed and planted for cabbaging in June, and thence every two months; and especially if - as I must presume - a previous transplantation had already been made during May, it is obvious that a succession of crops will be secured during every favorable season till the end of October; and I may add, from positive experience, that if the weather be then fine, and the succeeding winter prove open and mild ("a green yule,") any remaining stock in the seedbed, however long-shanked and ungainly they may be, if set deep in the soil of a well prepared bed, may make good progress to the end of November, survive the winter, and produce excellently hearted and sweet-tasted cabbages in April. Small they will be, and some perhaps will fly to seed; but those which do succeed, will amply reward the attentive care of the grower. My experience ap. plies, of course, to the latitude of London, though in a country far westward, and much later in its productions; but I presume that in the north also these hints may be rendered to a certain extent available.

2. The Savoy, Brassica Oleracea Bullata of De Candolle — a variety distinguished from all other hearting cabbages by the puck-

erings of its leaves. It is one of the prime winter vegetables, and well merits the attention of every one who has a garden or kail-yard. There are three sub-varieties — the large yellow, the green, and the smaller green, which is the hardiest of the three.

The savoy must be sown pretty early in the spring, and therefore I say nothing now of the early processes of its culture; but as it will require transplanting to plots where it is finally to remain, it will be needful to observe, that, as in all respects the intermediate culture will, as nearly as possible resemble that of spring sown cabbage, the directions above given will apply to it. In England it is customary to transplant at two or three periods of July for the winter supply; but it will be proper to commence the work earlier in the north, and to finish by the middle of that month. The ground should be well digged and pulverized; the texture rather light and the quality rich. Draw drills or shallow trenches about thirty inches apart; tread along the drills or press them with a broad pole, till the soil become smooth and compact; then plant the savoys eighteen inches asunder, filling the holes with water, and fixing the roots firmly in the soil. After they have become established, and begin to grow, the spaces will require the hoeings and diggings which are so essential to the progress of plants of all the cabbage family, and have been before alluded to. As winter approaches, the earth ought to be brought up to and about the stems.

The planting in open, manured trenches, in dry weather will not only secure the growth of the plants, but greatly tend to protect them from frosts during winter. Savoys are not considered to be in perfection, till they have been exposed to a degree of frost; and they will subsequently furnish the table throughout the winter months.

3 Broccoli. — This variety of the cabbage tribe is divided into a number of sub-varieties, all of which are excellent furniture for the garden. By Professor De Candolle it is placed in the sixth division of his arrangment, Botrytis (Brassica botrytis) i. e. resembling a bunch or cluster of grapes, but this grape-like species of variety admits of another sub-variety, as No. 1 is the cauliflower, Cauliflora, or flowering cabbage: But No. 2 is the broccoli, and is designated as Asparagoides, or asparagus-like cabbage. Though the similitude of broccoli to asparagus may appear somewhat fanciful; yet as precision of classification is obtained, it will be per-

ceived that it is far better to enter into minutiæ closely, than to persist in a mode of arrangement which is equally ill-defined and undiscriminating.

This delicious vegetable is perhaps without its rival in the garden, and its culture is very simple; it is too late, however, in the season to raise it from seed, and therefore I defer to enter upon a regular detail till the spring of next year. I have, however, raised some of the finest Portsmouth cream-colored, from seeds sown after the 10th of June, which produced compact and exceedingly large heads in the following April or May: it may therefore be worth while to try a small sowing as early as possible in June, following the directions, in as far as concerns the mode of preparing the soil, &c., which are given under the article cabbage, and transplanting into manured trenches, six inches deep, and ten or twelve inches wide, not later, if possible, than the third week of Angust. In the event of frosts, before November, no time should be lost to bring the earth that was thrown out and lay as a ridge on each side of those trenches, to the stems of the plants, as is done in earthing celery. But if we may trust some modern writers of new discoveries, broccoli may be propagated by slips, with the most successful results. Every one ought to try the method who has in his garden the stems of plants, the heads of which having been cut show a tendency to protrude sprouts. In the middle of June, says a writer, whose article is now before me, (or for Scotland, says as early as possible in June,) "I slipped off a quantity of the side shoots and planted them. I had them well watered, and well secured in the soil. They struck root in a very short time, and made strong plants which produced heads of a fine size at the usual season." "I am persuaded the plan is well deserving attention, not only with broccoli of the same kind I have cultivated (late flowering purple) but with many other kinds; thus an excellent variety might be perpetuated without the risk consequent upon seed."

I have not myself had an opportunity of experimenting upon this vegetable, since I saw the article quoted from, but have reason to believe the plan has been proved to be feasible; in fact, there is nothing in the analogy of the species with its type, which is unfavorable to the operation.

4. Peas.—At this season of the year it may appear almost too late to speak of the cultivation of the pea; but I am inclined to notice it for a reason which will be shortly explained.

The garden-pea, of which there are many varieties, is found in the fourth tribe, Vicieæ (that is among the vetches) of the great suborder Papilionaceæ of the natural order Leguminosæ, and in the 17th Class, 4th Order of the Linnæan System, Diadelphia, Decandria. Every one is aware of the peculiar shape assumed by the blossoms of plants of the pea tribe; which, it is evident, can readily be made to constitute the type of a very natural class, in which most of our esteemed leguminous or pulse-bearing vegetables are to be found.

At some future day, I intend to enter at large upon the characters of all the favorite peas for table use; but on the present occasion I only alluded to one, which is a great acquisition, and of very recent introduction, the early white Warwick. It is adapted to field, as well as garden culture, is moderately prolific, hardy, extremely early, rapid in its course of growth, soon off the ground; and of a high peculiar flavor, that to some persons is extremely agreeable, though others do not affect it.

The seed, two years since, was dear, its price is now reduced; and it is stated that three crops may be produced on the same land, and leave it open for wheat. This, however, I have not seen proved: but having grown the pea, I can recommend it to every one who wishes a rapid grower. A crop sown in a long drill very early in June, may be succeeded by another sown in July, with every prospect of success. If the ground be dry, from a continuance of hot weather, the best method to ensure a vigorous plant is to dig a moderately broad trench, to saturate the soil at the bottom with water, to return the earth into the trench, and make that very wet; then, after covering the earth with mats, or green boughs for a day. just to permit the earth to settle, and so far to drain itself as to become in a workable condition, to strike a drill three inches deep, to sow the seed along it pretty thickly, but not in the crowded state too frequently seen; water should then be poured from a spout of a pot over peas, and the loose earth returned upon the seeds, and pressed or trodden firmly over them. One liberal preparatory watering thus given, is of more avail than fifty subsequent sprinklings. Mildew so common on the plant of autumnal crops, is, as Mr Knight truly observes, obviated. He has had perfectly fine peas on his table in October, and it is certain that where disease can be prevented, peas in that season are a delicacy of the first rate ex-

cellence. The Warwick, I think, promises to prove a valuable species for the purpose of a late crop, because the course of its entire culture is more rapid than that of the "frame" or early Charlton pea. When the plants rise above the soil one inch, the earth near the roots ought to be loosened by the thrust hoe. Another hoeing must be given when the plants are three inches high; and then, after drawing the lightened earth to the stems, to the height of an inch and a half, as a ridge on each side, branching sticks a yard high are to be applied. Nothing favors pea culture more than judicious sticking; the plants are brought to the light, are supported, and at the same time protected. Mildew is the bane of autumnal crops; it seems to be promoted by a droughty state of soil, high solar heat during the day, and cold dews at night; rapidity of growth produced by a deep moist bed, procured by preparatory and profuse waterings, appears to be the only effectual security from this fungus.

# Atr. II .- Remarks on the Moutan Paony, or Tree Paony.

A VERY elaborate, but in many parts both fabulous and mistaken account of the Moutan Pæonies is given in the Memoires sur les Chinois, the substance of which I briefly note. They are stated to be of considerable antiquity in the gardens north of China, and are supposed to have been originally found wild on the mountains in the province of Ho-nan. They were at first cultivated in the district of Lo-yang, and subsequently in the Imperial Gardens of Kai-fongfou, in Ho-nan; but they appear to have succeeded best in the province of Hou-Konang, from whence they are now supplied to the gardens of Pekin, and other parts of the Empire. They are stated to have received various names, as Hoa-ouang, or King of flowers, Pe-leang-kin, or Hundred ounces of gold (from their value,) and Mou-chao-yao, or the Tree Pæony, to distinguish them from the Herbaceous Pæony.

It is represented that Moutans have been cultivated of various heights from very dwarf plants, to trees of twentyfour feet high, and that different varieties have existed, which produced their flowers at different seasons, some in winter, and some in autumn; but the spring flowering varieties are those now in cultivation. These are said to be very numerous, with flowers of various degrees of fulness, from semi-double to very double, and of the following colors, "rouge, violet, pourpre, amaranthe, jaune, blanc, noir, et bleu," in great variety. Some are represented to possess considerable fragrance. Accounts of the way of cultivating the Moutans in China are also given; they appear to be propagated from seed, and by other modes of increase which will be noticed hereafter. I do not place much reliance on the correctness of the details, in this memoir, which extends to several pages; and I am incredulous, not only as to some of the colors of the flowers, which are said to exist, but also as to the extent in number of the varieties.

The provinces and places above mentioned, are in the northern and central parts of the Chinese Empire, and the habits of the Moutan evidently exhibit a high mountainous, or alpine origin, subject to being buried under snow during winter. They make strong shoots in early spring, and break rapidly into foliage, and blossom.

In the description of China, published by Duhalde, in 1753, very little notice is taken of the Moutans; they are described under the general name of *Pivoines*, as being of different colors, and some of them fragrant. A brief notice of the Moutans in the garden of Canton, will be found in Dr Abel's account of Lord Amherst's Embassy to Pekin, in 1816; but it contains no information respecting them which is not herein stated. They are not mentioned, as far as I have discovered, in accounts of other travellers in China.

It must be concluded that the Moutans were transferred from China to Japan, where they are cultivated; but they do not appear however, to have been introduced in much variety into the latter country. Kæmpfer, in the fifth fasciculus of his Amænitates Exoticæ, printed in 1712, describes the plants of Japan, and among them the Botan, as a species; but does not mention any varieties. He distinguishes it by its woody stem from an Herbaceous Pæony called Saku Jaku, of which he names three varieties. Thunberg, in his Flora Japonica, printed in 1784, confounds the Saku Jaku and Botan together, refering both, most absurdly, to the Pæony officinalis of Linnæus, and states they are cultivated in every garden in Japan. The Saku Jaku of Kæmpfer is, according to the printed opinions of those who have attended to Pæonies, referable to the species well known in our gardens as P. albiflora, though neither of the varieties mentioned by him have white flowers.

All the Moutans are sufficiently hardy to bear exposure in the open ground in the winter. The Banksii has been considered the hardiest; but neither that nor Papaveracea appear to suffer from frost, and they are, consequently, frequently planted in the borders of gardens: they will all grow in a northern aspect, and perhaps such a situation may be better suited to them, than one where they would receive more of the direct influence of the sun. But though they are not hurt by the severity of winter when planted out, the chilling blasts of our springs have very injurious effects upon them, and both leaves and flowers are often cut and injured when entirely unprotected at that season. From this cause, those who desire to have them in the greatest perfection, give them a covering of glass, under which the beauty of the blossoms and the delicacy of the foliage is perfectly preserved. They ought, however, to be planted in a border, in preference to being kept in pots. Warmth from fire or steam is not necessary to them; they are brought earlier into flower by heat, but not improved by it. The best mode of protecting them, and at the same time having them in perfection, is that of glass frames, or houses without flues; these may be made of any dimensions that fancy may require.

The propagation of Moutans, upon their first introduction was a matter of considerable difficulty; they have, consequently borne a high price in the nurseries; and though they are now multiplied extensively, yet with all the experience which has been acquired, the obtaining strong new plants of them is a tedious operation.

All modes of propagation have been tried with them, viz. by seeds, suckers, grafts, cuttings and layers. They rarely produce perfect seeds, but would probably do so more frequently if the impregnation of the stigmas, was more properly attended to.

The seedlings which have hitherto been obtained, as may be observed from the accounts of such in the former part of this paper, are but few. Suckers, or rather root shoots, may sometimes be severed successfully from large old plants, and such soon become strong enough to flower. If the work is carefully executed, grafts of the rarer sorts may be fixed on pieces of the roots of the more common.

Those pieces of roots must be established in pots, and in the spring, a bud with a little wood attached to it, may be joined to the root in the manner of a graft, a slice of the root being taken off to receive the piece intended to be united to it. When the fitting is

completed it is to be covered with clay, taking care to leave the eye exposed; the pot must be kept covered with a hand-glass. Trials have been made of grafting the Moutan on roots of Herbaceous Pæonies, and I have heard that it has sometimes succeeded, but not sufficiently to encourage the practice generally. I have not witnessed the operation, but have been informed that it is performed by attaching a short slip of a branch of a Moutan, on which there is a bud, to the succulent tuber of an herbaceous Pæony, binding them tightly together, sinking them below the surface of the earth, and covering them with a glass; the tuber supports the graft until it emits roots sufficient to maintain itself independently. Ripe cuttings taken off in August and September, with a small piece of the old wood at the end, and planted against the side of garden pots, in a mixture of loam, leaf-mould, and sand well drained, and protected from the air by glasses, will succeed. The pots must be kept secured from frost in the winter, and shaded in summer; in the spring, the progress of the cuttings may be assisted by being placed in a frame with a gentle bottom heat. But the more general plan of multiplying Moutans is by layers, the shoots for which purpose should be planted either in protecting pits, or in sheltered borders, which should be covered with mats spread over hoops, the branches when laid down, require a longer time than is usual with common shrubs to emit roots, and the largest are seldom fit to be removed till they have remained two years attached to the stool. The soil used for this operation is good rich loam, made light by a considerable mixture of sand, with the addition of one fourth part heath mould. The shoots when laid down require to have a longitudinal slit, or tongue made in the inner part of the bend; and this must be done with care, for, being brittle, the wood is liable to break: the tongued part should be bedded in a mixture of loam and sand.

In addition to the above, it may be interesting to know the nature of the methods of propagating the Moutan in use among the Chinese. Upon this subject we have no information, except from the accounts in the Memoires sur les Chinois, before alluded to. According to these, the modes of propagation, exclusive of that by seeds, are threefold, viz. by suckers, by splitting the stem, or by grafting.

When suckers are produced by an old plant, the earth is carefully removed from about its roots, which are laid bare till the whole of

the union of the sucker with the parent root is uncovered. They are then separated, but the wound of the old plant is suffered to remain exposed for a day or two till its surface dries; dry earth is then placed about it, and care is taken that no moisture is applied for the space of a fortnight afterwards. The young sucker is enwrapped in fresh leaves, in which state it is kept till the lower end becomes shrivelled, and so much contracted, that the two opposite sides touch each other. It is then planted in rich earth, which is rather dry than otherwise, and kept well shaded until it has rooted, care being taken to guard it from frost.

When the operation of splitting the stem is performed, an old plant is selected, and its stem is regularly slit into four or six equal portions, from the top to the very bottom, among the roots; the divisions of the stem are kept apart until the wounds begin to dry, when the middle of the stem is filled with a sort of plaster, made with mortar (mortier) and rich earth, among which is mixed fat and a small quantity of sulphur. The plant so prepared is suffered to remain until the autumn, when each division is fit to be separated, with the portion of root belonging to it.

Grafting is practised on the roots of the more common Moutans; when this is attempted, the root of the stock is laid bare during some weeks, to the depth of three or four inches; just before the autumn shoot is made, the earth is again heaped about the root, and soon afterwards, when the sap appears in full motion, the operation is performed. This is done in the way we call crown grafting. A kind of clay made with rich mould, formed into a sort of mortar with the expressed juice of herbaceous Pæony roots, is then applied about the scion and stock. The plant is afterwards shaded from the sun, and protected from frost during winter; and when the spring arrives, it is left to take its chance. If the scion ever pushes, all danger of losing it is past.— Floricultural Cabinet.

# ART. III. - On the Culture of the Tree Rose.

The following excellent article on the culture of the Tree Rose is from Harrison's Florticultural Cabinet, and although calculated for the meridian of London, yet, it answers equally well for our own climate and country. The Sweet Brier, which is found in abundance in this vicinity will answer very well for stocks, to bud upon, but I believe the Maiden's Blush, the Boursalt, the Rubifolia, and some other strong growing kind, are considered superior.

They should be transplanted any time before the ground freezes in the fall or winter, or very early in the spring.

Selection of Stalks to Bud, &c. upon. — Any time from the end of October to the middle of February, plants of the wild English Roses are procured. I find, however, that the earlier the better. There are several varieties of very upright growth, making shoots nearly half an inch in diameter, and growing several feet high in one season. The color of such is either wholly green barked, or green slightly tinged with brown.

The ripe fruit of both is of a long oval shape. These kinds are generally to be met with in plantations or woods, and occasionally in hedges. There is a spreading, bushy growing kind, which has a red bark, and a small roundish fruit; this I find does not answer near so well as the others, — the buds not taking so freely, nor, if they take to uniting, do they grow so kindly afterwards.

In getting up the wild stocks, I have always given strict order sto my gardener to get them up with as much length of root as convenience would admit. This attention is necessary in order to get some fibrous roots; and, after all, it will often occur that not a single fibrous root will be found upon the main roots. They are however, very free to grow under either circumstance; only the former ones afford the advantage of making more and stronger lateral shoots the first season, and also better placed shoots for budding upon.

Stocks of different sizes and heights are procured in order to suit a vigorous, or less so, growing kind, to be inserted by budding, and to have some worked from two to five feet high. Care is taken to get such stocks as are free from large knots, some such being found upon the stalks when of several years' growth. It certainly

adds to the beauty of the tree, to have a straight free growing stalk.

Having got up the stocks, on a day that is not frosty, I have them brought as soon as convenient, that the tender roots be not damaged by exposure to a cool air.

In planting them, I select a good soil about a foot deep, and have a portion of well rotted dung dug into it. The strongest growing kind of stocks I plant in one piece of ground and the less so in the other. This is easily ascertained by observing what strength the lateral shoots have previously grown, before removal. The necessity of this selection is requisite, because if a very vigorous growing kind were inserted into a small stock, the bud would take all the support, and grow to a single shoot, or from a poor head.

Before planting, I have the stocks dressed, cutting clean away all lateral shoots to the height at which I wish the stalk to be kept, and cutting off the head about one quarter of an inch above a bud, in a sloping direction from the bud. Any damaged roots are finished with clean cuts, either by a knife or fine toothed saw. The top cut of the stock I always cover over with a mixture of bees' wax and pitch to keep the wet out.

The stocks are planted in rows at from two to three feet apart, arranging the tallest in the back row, and the lower ones in the front proportionably. A trench being made, the roots are regularly disposed, and covered from four to six inches deep, treading the soil gently upon the roots, and close up to the stem, to fasten it properly. I then have a stake fixed so as to tie it to its place, and prevent its being shaken with the wind. I have observed in some nurseries a long stick, fixed horizontally at the height of three feet, and to which the stocks were tied; but this does not answer so well as each having a separate stake to keep it in an upright position, then wind those secured in the cross bar manner in a falling direction. Nothing more is required until the stocks push shoots in March or early in April.\*

The most certain time to bud the rose is from the beginning to

<sup>\*</sup> In preparing the bud, it is unnecessary to remove the bit of wood attached to the bark. Omitting to do so, saves trouble, prevents the buds from being damaged, and more than equally ensures success.

the end of August, the sap then being in full force, more especially so if the weather be moist after a droughty season; whether early or late in the month will be pointed out by the season being an early or late one. The desideratum in the plant is, that the bark will most easily separate from the wood, exhibiting at the inside a free supply of sap. If the season be droughty the sap will not flow so speedily, unless a good soaking of rain falls, or the stocks have a free watering a week previously to budding, and if this be repeated it will be an additional stimulus.

If it happens that there is a cloudy day to perform the operation of budding in take advantage of it, if not, to bud towards the close of the afternoon will be the best part of a sunny day. I have budded ten kinds of roses upon one stock, all of which succeeded and have bloomed most singularly beautiful. Care was taken to have those kinds which were of a similar habit in growth, for a vigorous growing kind and a weakly one are unsuited together; the former could by its luxuriant growth prevent the other from having due support, and eventually would, in a few years, perish.

In selecting a bud for insertion, choose a strong and healthy shoot, cut away that part which has pushed since June, and from it select a bud for the desired purpose.

A plump one should be taken, that is, it should be full, round, quite closed, (i. e. not pushed.) Such a bud may generally be had about midway up the shoot, the lower ones being more dormant, and the upper ones scarcely perfected enough. The bud is situated in the axillæ of the leaf.

The shoot having been cut from the plant, take it in the left hand, holding the thickest part inwards, then with a very sharp knife, begin to enter the shoot about three quarters of an inch above the bud, cutting downwards about half way through the shoot, and bring out the knife about the same distance below the bud, in which case the bud is contained in the portion cut off, "which is termed a shield," and is formed as a segment of a circle. Then take the shield between the finger and thumb holding the bud downwards, that is in a different form, to that it had grown in, press the shield so as to be held firmly, then gently twist the upper end of the shield "which is nearest you," and this will loosen the wood from the shield. The wood must be taken out with the right hand, whilst

the shield is held by the left. The separation of the wood from the shield must always begin at the upper end as it had grown. It will then be necessary to see that no vacuum be in the inside of the bud, if there be, the root of it is gone, and it will not grow, though the bark might unite, no shoot could be produced. If there be no hollow inside the bud it is fit for use. If the shield does not separate freely from the wood, the shoot might be soaked for an hour, and it would assist the shield and wood to separate more readily. The edges of the bark of the shield must be quite smooth and clean, on no account to be left jagged.

The leaf, in the axillæ of which is the bud, must have one half of it cut away, for the evaporation of the whole would much weaken the bud, and rather prevent its growth. The shield having been thus prepared, lay it in water till the incision is ready for its reception. I have already noticed that the side shoots must be left to bud upon; on the upper side of a shoot of the present year, an incision must be made through the back an inch and a half long, the lowest point of the incision to be about a quarter of an inch from the stalk, that is, from the origin of the shoot. At the upper point of the incision already made, a cross cut must be made through the bark, as long as it will admit the shield readily under it. With the ivory end of the budding knife, proceed to open the edges of the bark at the upper part of the incision, and very carefully proceed downwards, which if the tree be in a proper state, will separate readily. This being done, slip in the shield, and carefully force it down, so that all the shield may be inclosed under the bark, excepting about the eighth of an inch of the upper part of it, which must be left outside, and that portion must be cut across so as to make it fit to the inside of the cross cut in the incision, and the bark of the upper part of the shield may come in even and close contact; this is very necessary, because the first union takes place there, by the descending of the sap coming in contact with the top of the shield.

The bud being thus carefully inserted, must not be removed from its position; immediately some wet bass matting must be bound tight round the stem, beginning at the bottom part of the incision, crossing the ligature front and back, and terminating above the cross cut. The bud and leaf must be left clear, but only just to peep out. Let the bass be secured at the top in a knot, and that to

be the opposite side of the shoot to the bud, in other words, behind it. If the knot were made at the same side as the bud, it would hold wet, and be liable to damp off the bud in a rainy season. It is of advantage to shade the bud, which is easily done by taking a laurel leaf, and forming it so, that by tying the ends together, and cutting out a portion to fit it to the stalk, it will form an arch over, and thus protect it from the injurious effects of wind, sun or wet; all of which should be particularly guarded against for a time, in order to secure certain success.

If it be desirous to have the name retained of each kind of rose inserted, this must now be attended to by affixing a sheet lead, or other label thereto, by means of copper wire, with the name or number to signify it.

Persons who have not been accustomed to budding, should previously experiment a little upon willow shoots, the bark of which easily moves, and affords facilities for such attempts.

If after budding the weather should be droughty, the stocks, should have an occasional watering at the roots, which will greatly contribute towards successs.

If a bud should fail and it be discovered in time, such a shoot may be supplied by inserting another bud.

Buds may be very successful inserted into the main trunk of a stock; one or more buds may be put into it; the bud is found to succeed best about half way up the stock; the younger the stock the better it will succeed.

If the operation of budding has been properly performed, and the stock suitably supplied with wet, from rain or otherwise, in about a a month from the time of budding, the bass ligature may be taken way, and one tied round in a loose manner. This admits the bark to swell, whilst it prevents the edges from being drawn open.

If the weather should be droughty, the first placed ligatures must be kept on for six weeks, and in case of continued drought even till spring.

When the stocks have ceased growing, which will generally be the case by the end of October, the branches of the stock must be cut in order to strengthen them, and make them meet.

In shortening them, leave about six inches of each above the bud which has been inserted.

If the ground round the roots be covered a few inches deeper, with some straw manure, during winter, it will be of some service to do it.

No other attention is required till spring, excepting to have the stocks properly secured against the wind.

# ART. IV. — List of New and Rare Plants noticed in Foreign Periodicals.

By the recent arrivals we have received some of our English periodicals, in which are described the following new and rare plants.

- 1. "Allium Siculum Sicilian Garlick. Nat. Ord. Asphodeleæ; Linnæan class, Hexandria; Order, Monogynia. This remarkable species of Garlick is grown in Chelsea Botanic Garden; it grows very extensively in Madonia, inhabiting the shady valleys; it is also found in other parts of the kingdom of Sicily. The flower stalk rises to the height of four feet, crowned by an umbel of nearly thirty blossoms, which, when expanded, are pendulous; they are of a greenish yellow color, marked with rosy purple and white. The whole plant has a disagreeable scent, being far more powerful than that of any other species. Allium, from the Celtic word all, acrid; alluding to the properties of the plant. Brit. Flow.
- 2. Antirrhinum Glandulosum—Glandular Snapdragon. Scrophularinæ; Didynamia Angiosperma. A pretty flowering hardy annual, introduced into this country from California, by Mr Douglass. The flower stem rises about two feet high, branching, and each branch terminating with a raceme of flowers of some length. The blossoms are of a fine rose color outside, and pale yellow within. The plant blooms from July to the end of the season. Seeds are produced in abundance. It merits a place in every flower garden. Antirrhinum, derived from Snoutwort, the appearance of the corolla resembling the snout of some animal. Bot. Reg.
- 3. Ardisia Odontaphylla Tooth leaved Ardisia. Like all other Ardisias, this species is a handsome evergreen hot house shrub. It is a native of Bengal, where it was discovered by Dr.

Buchanan. The flowers are a pale salmon color streaked with rose; they are highly fragrant. Ardisia, from ardis, the point of a weapon, referring to the sharp pointed segments of the corolla. — Bot. Reg.

- 4. Begonia Sanguinea. Blood red Begonia. This very striking species is a native of Brazil, from whence it has been introduced into this country in 1832. It has bloomed in the Edinburgh Botanic Garden. It requires a hot house temperature. The stems are a fine red color, and the leaves at the upper side of a green, perfectly smooth, and at the underside of a very deep blood red, producing a striking appearance. The flowers are white. The plant deserves a place in every collection of hot house plants. Brit. Flow. Gard.
- 5. Berberis Empetrifolia. Crowberry leaved Barberry Berberideæ. Hexandria Monogynia. Mr Lowe, of Clapton Nursery, recently introduced this plant into this country. Mr Lowe's collector, Mr Anderson, discovered it in the Straits of Magellan. It is a very delicate and pretty plant, forming a procumbent shrub with slender twiggy branches. The flowers are large of a rich orange yellow color. This plant is offered for sale in the London Nurseries. Brit. Flow. Gard.
- 6. BLETIA PATULA Spreading flowered. Orchideæ: Gynandria Monandria. This very neat and pretty flowering species, is a native of Hayti, and was introduced into this country in 1830. It has flowered in the stove in the Edinburgh Botanic Garden. The flowers are produced upon an elongated raceme, each raceme having upwards of twenty flowers upon it; the blossom is nearly three inches across, of a beautiful reddish lilac color; the base and edges of the labellum are white. It is a very desirable species and merits a situation in every collection of stove plants. Bot. Mag.
- 7. CIRRHÆA TRISTIS Orchidaceæ. Gynandria. Another very pretty Orchideous plant, a native of Mexico, it has bloomed in the collection of the Messrs Loddiges. The flowers are produced upon a pendulous raceme of several inches long; the flowers are of a dark purple, suffused with blood color and greenish yellow; the labellum is of a dark purple; they are very fragrant; each flower is rather more than an inch across; the petals are very narrow. Bot. Mag.
  - 8. Cotoneaster Laxiflora Loose clustered flowered. Ros-

aceæ; Icosandria Digynia. This species forms an upright shrub from five to six feet high. It has been recently introduced into this country by the London Horticultural Society. The plant makes a pretty addition to our hardy shrubs; it has much the appearance in foliage, of a Vaccinium rather than a Cotoneaster. The flowers are small, of a rosy color, produced in pendulous cymes. — Flor. Cabinet.

- 9. Calliopsis Tinctoria var. Atropurpurea, Dyeing Calliopsis, Dark flowered variety. This variety of the well known and much admired Coreopsis tinctoria, now called Calliopsis tinctoria, is very superior to that species; it was raised from seed saved by Mr James Tait, of Merry Flats, near Glasgow. The flowers are about the size of C. tinctoria; the centre is yellow, surrounded by a circle of dark purple, beyond which to the extremity of the petals, is of a fine red scarlet color; some of the flowers are destitute of the yellow centre. It is a splendid flowering annual, and deserves a place in every flower garden; we have grown it this season in masses, and it produces a fine show. Seeds of all the kinds will be plentiful in the hands of the London seedsmen next spring. Flor. Cabinet.
- 10. Crategus Spathulata Spathula leaved Hawthorn. Rosaceæ. Icosandria Pentagynia. This species forms a pretty bush, growing about five feet high. The C. virginica of the nurseries is the true C. spathula; it very much resembles C. paucifolia, but it differs from that species by the leaves being edged with strong dark glands, and having large leafy stipules. The flowers are white, produced in clusters of two and three each, succeeded by green fruit of moderate size. It is a native of the wood in Virginia and Carolina. Crategus, from Kratos, strength; referring to the durability of the wood. Bot. Reg.
- 11. Cyrtopolium Punctatum Spotted flowered. Orchidiaceæ: Gynandria Monandria. A very splendid flowering species, introduced from Brazil by William Swanson, Esq. some years since. It bloomed for the first time in the Glasgow Botanic Garden in 1835. The petals are yellow; sepals mostly spotted with purple and red; the lip has a purplish red edge; the remaining parts of the flower are yellow, altogether producing a splendid and striking contrast. Flor. Cab.

- 12. Crocus suaveolens Fragrant (flowered) Crocus. A very pretty pale blue flowered species, a native of Italy; it is also found growing plentifully about Rome. It is cultivated in the garden of the Hon. W. T. A. F. Strangways, Abbottsbury Castle, Dorsetshire. The pretty and fragrant flowers recommend it to every gardener. Brit. Flow. Gard.
- 12. Gilia Tenuiflora Slender flowered. Polimoniaceæ; Pentandria Monogynia. The late Mr Douglass sent seeds of this new hardy annual from California, to the London Horticultural Society. Mr Douglass had appended the name Gilia splendens to the packet, but it does not certainly merit such an appellation, being much inferior to G. tricolor. The flowers of the present species are produced upon slender, branching stems, which rise to about two feet high; each flower is about one quarter of an inch across, of a pale rose color, slightly streaked with red out side, and of a fine violet in the inside. The flowers do not produce much show where a single plant is grown: but if grown in masses, it makes a pretty addition to the flower garden. Bot. Reg.
- 14. Lupinus Latifolius Broad leaved Lupin. This species was found in California by the late Mr Douglass; it is a hardy perennial. The flowers are like L. littoralis, of a purplish violet color. Bot. Reg.
- 15. Myanthus Barbatus var. labello albo. Bearded Flywort, white tipped variety. Orchideæ. Gynandria Monogynia. A native of Demerara, from whence it was introduced into this country, by Mr. Allcard, Stratford Green, Essex. And in the collection of that gentleman it bloomed in May, 1836. The flowers are produced upon a long and many flowered raceme. Each flower is two inches across, having narrow petals, of a dark green, spotted with dark purple within, with paler spots on the outside. The lip is fringed with numerous long white hairs. Altogether it is a singular and pretty flowering plant, meriting a place in every collection. Myanthus, from muia, a fly; and anthos, a flower. The flowers look very much like a pressed fly, when they are dried. Bot. Mag.
- 16. Pæonia Albiflora var Pottsii; Potts' Chinese Pæony. The late Mr John Potts sent this very handsome variety from China in 1822. The flowers are of a large size, double, of a rich crimson color, and are by far the most splendid of the varieties of albiflora. The plant is quite hardy, and a profuse bloomer. In the garden of

- R. H. Jenkinson, Esq. Norbinton Hall, Kingston, Surrey, it has bloomed very freely, having, this season, about forty flowers upon a single plant. Brit. Flow. Gard.
- 17. Sarracenia; Polyandria Monogynia. A native of Louisiana, in the Southern United States of America. The plant has often been introduced into this country, but being very difficult in cultivation, has been lost; a plant, however, has bloomed in the stove of the Glasgow Botanic Garden, March, 1836. The flower scape rises to about two feet high, producing one flower. The flower hangs in a drooping manner: of a rich deep red color, having a splendid appearance. The flower is from two to three inches across. Bot. Mag.
- 18. Streptanthus Hyacinthoides Hyacinth flowered. Cruciferæ; Tetradynamia Siliquosa. An annual plant, a native of Texas, where it was discovered by the late Mr Douglass. The stem grows to about a yard high, branched. The flowers are produced upon long racemes, bearing numerous flowers, which hang in a pendulous manner; they are of a bluish purple color. The flower much resembles a small hyacinth blossom, but having very narrow petals. The plant has bloomed in the greenhouse of the Glassgow Botanic Garden. Bot. Mag.
- Acanthaceæ, Didynamia Angiosperma. Synonymes, Ruellia Sabiniana and R. argentea, R. macrocarpa, var. argentea. This pretty flowering plant was introduced into this country by Dr. Wallich. It is a native of Nepal. It requires a hot house temperature. Dr Wallich named it in compliment to Joseph Sabine, Esq. to whom Horticulture is very greatly indebted; we hesitate not to say, that the present superior state of gardening, and the very extensive taste for it which now prevails owe, in a considerable degree, their rise to that gentleman. The S. Sabiniana grows three feet high, shrubby. The flowers are produced in terminal spikes. The corolla is funnel shaped, lower part of the tube yellow, the rest of a bright bluish purple. It blooms in the latter part of winter. Bot. Mag.
- 20. Yucca Draconis Dragon-tree-leaved Adam's Needle. Lililaceæ. Hexandria Monogynia. A very pretty flowering species, cultivated in the Nursery establishment of Messrs Blackhouses, York. It grows freely in the open ground; the spikes of flowers

rise about three feet higher than the foliage, producing an immense number of blossoms. The segments of the flower expand much more in this species than any of the others, which adds very much to its interest and beauty. The petals are of a greenish white with the tips of the petals of a deep rosy purple. The plant is a native of Carolina, where, it is said, it will grow at the height of ten feet. Messrs Blackhouses find that Yucca filamentosa, glaucescens, rufacincta, and recurvifolia, as well as the above described species, grow and flower in the open air. — Bot. Reg.

21. Malva Fulleriana — Fuller's Malows. This splendid flowering Mallows has recently been raised from seed in this country, from whence obtained we no not know. It is a hardy shrub, growing freely and blooming profusely, if planted in a sheltered situation, it reaches from eight to ten feet high, forming when in bloom a most beautiful object. The plant merits a place in every shrub bed or border. The stock, twelve plants, has been forwarded to us for disposal at one guinea each. Orders for which will be executed by us, or any of the London seedsmen. — Flor. Cab.

The flowers of the Malva Fulleriana, as figured, are five inches across, white ground, striped with pink and red like a carnation.

22. Dodds, gardener to Sir George Warrender, and it is generally considered by all who have seen flowers of it to be unrivalled in its class; wherever we have seen it exhibited, either in the country or metropolitan shows, its superiority was so evident, that the most inexperienced in a knowledge of the properties of a first rate flower, were struck with its beauty, whilst those persons capable of ascertaining its merits, without a single exception that we have seen or heard of, state that it is, in its class, superior to any other exhibited this year. — Flor. Cab.

Flower white, with cupped petals delicately tipped with rose pink. If the figure of the flower is correct it must be a first rate flower.

23. Sphonogyne speciosa. — This is a most beautiful flowering annual, growing about a foot high. We received seeds of it from the Cape of Good Hope, in the spring of the present year. The plant is of handsome foliage, and a most profuse bloomer. The flowers open fully when the sun shines upon them, and then display a show of the most pleasing kind. We have had it in bloom since

the first of June, and it appears likely to continue to the end of the season. A bed of it would be a delightful contrast to one of an opposite color. It belongs to the *Nat. Ord.* Compositeæ, and has some resemblance to the Calliopsis; rays, yellow; disk dark brown; flowers about two and a half inches across. —Flor. Cab.

24. Nolana atriplicifolia. — A new and very handsome flowering annual, of prostrate growth, or if grown in masses will rise to half a foot high. The flowers are produced most numerously, and give a very pretty appearance. The plant deserves a place in every flower garden. It is a desirable plant to grow in order to hang pendulous over the edge of a vase, pot, &c. contrasting with Verbena melindres, Anagallis fruticosa, &c. Seeds may be obtained of the principal seedsmen next spring. — Flor. Cab.

We cultivated the Nolana atriplicifolia the last season and consider it a beautiful plant. The flowers have some resemblance to the Dwarf convolvulus (Convolvulus minor,) fine azure blue with a white centre, the bottom or tube of the flower yellow.

A beautiful pansy is figured in the Florticultural Cabinet, called "Forsyth's Beauty of Anlaby Pansy." The flower is of first rate excellence both in form and color.

J. B.

ART. V. — On the Culture of the Turnip Rooted Cabbage as practised in Germany and Denmark, with a description of some of its varieties. Also on the Wintering of Dahlias. Communicated by Andrew Rud, recently from Denmark.

THERE are two species of Turnip rooted cabbage cultivated in Germany and Denmark, viz. Kohlrabi over the earth, and Kohlrabi under the earth, each having a number of varieties. The second species is used as food for cattle, and when boiled, frequently for the table. The first species is not so much in use for cattle; the roots or bulbs being much smaller, but much esteemed for the table.

A variety of the last, termed Glas Kohlrabi, in some parts of Germany is forced in hot beds, for the sake of having it early and tender.

They are cultivated the same as the late head cabbage, and taken up in the fall. The best roots are selected for seed: after the

leaves are taken off, they are placed in a dry part of the garden and covered with earth, over which is placed sea weed, horse manure, or some other protection. In the spring they are planted out, and great care is taken, that no other species or variety of the Brassica family are placed near them, as it is well known that the pollen of these plants mix at a great distance, thereby producing degenerate species. The tops of those reserved for use are cut off so close that they cannot sprout, and then housed in the cellar, or packed away in pits in a dry part of the garden.

Schnitt Kohl, a variety of Kohlrabi under the ground, is cultivated for its leaves, which are boiled and eaten like spinach. It is sowed in August, stands the winter without covering, and forms an agreeable green for the table in early spring. The leaf cabbage, (Brassica oleracea viridis,) or green cabbage, is much cultivated there not only for the table, but also in large quantities for feeding sheep, which are freely given to ewes with lamb in the winter season. It bears the winter without covering, and the leaves are considered best after having been exposed to the frost. A variety of this, called the Pommerian Kohl, attains the height of seven or eight feet. A variety with red spotted leaves and another with white spotted leaves (B. oleracea var. fol. varieg.) are cultivated for adorning tables, and are frequently planted between groups of shrubs, forming in the spring a pleasing effect.

Wintering Dahlias. — The following method to preserve Dahlias through the winter is sometimes adopted in Denmark. When the foliage and flowers of the plant have been destroyed in October, the stalks are cut down about a foot from the ground, and the earth drawn up around them with a hoe. They stand thus until the beginning of November, (unless the cold should be so severe as to endanger the roots) that the tubers may become as ripe as possible: they are then dug up and placed in a trench in the garden with earth between them and a layer of earth over them. A covering of sea weed, horse manure or leaves is then thrown over sufficient to exclude the frost. Here they remain until the time of planting in spring. Dahlias thus wintered, grow much stronger than those kept in the common manner. It is necessary that a dry spot be selected for their winter habitation.

Brighton, Jan. 2, 1837.

ART. VI. — Notices of the Annual Exhibitions of various Horticultural and Floral Societies in England.

The London Horticultural and Floral publications for the month of November, give the details of the annual exhibitions of various societies. The Dahlia seems to bear the palm of victory in them all, and we have long lists of superb flowers exhibited by numerous competitors. The names of many of the flowers are familiar to us, as forming a part of the varieties which composed the brilliant display of Dahlias exhibited in Boston and New York the past season.

We have an account of "The Grand Dahlia Show at Salt Hill, NEAR Windsor," which, "was honored by the presence of Her Majesty, the Princess Augusta, and a large party from Windsor Castle. Her Majesty appeared much delighted with the various collection of flowers, and condescended to name two splendid seedlings, one a yellow belonging to Mr Wilmer, and a lilac of Mr Brown's. The first named, Superba, the second Beauty."

Various prizes were awarded. First, to private gentlemen or their gardeners growing more than two hundred plants, and exhibiting a collection of fifty blooms. Second, to the same with stands of twentyfour blooms. Third, growers of less than two hundred plants exhibiting stands of twelve blooms. Fourth, collections of one hundred blooms by nurserymen and growers for sale. Fifth, to the same with stands of twentyfour blooms. Sixth, seedling raised in 1835 and 1836. Among those to whom prizes were awarded for seedling flowers, we notice the names of Widnall and Brown, gentlemen well known to amateurs, as being famous for raising many fine varieties from seed.

BATH ROYAL HORTICULTURAL AND FLORAL SOCIETY. — The annual exhibition of Dahlias by this society took place at Sydney Gardens, on Thursday, Sept. 15. Open for competition to all England. Extra subscription Dahlia prizes given in plate. The following is a list of prizes awarded.

First Class. — First prize, a handsome silver tankard, value ten guineas for 48 blooms.

Second prize, a handsome silver tea pot, value six guineas, for 48 blooms.

Second Class. — First prize, a handsome pair of goblets, value eight guineas, for 36 blooms.

Second prize, a handsome silver sugar basin, value five guineas, for 36 blooms.

Third Class. — First prize, a handsome silver salver, value three guineas, for 24 blooms.

Third prize, a handsome silver sugar castor, value two guineas, for 24 blooms."

"By some oversight, owing probably to the vast extent of the shows, the stand of 24 blooms, belonging to Mr Brown of Slough, was overlooked until the first prize had been awarded, the judges, however, very handsomely made the *amende*, by voting to Mr Brown a prize equal in value to the first prize. (Six guineas.")

"Fourth Class. — First prize, handsome pair of butter boats, value five guineas, for 12 blooms.

Second prize, handsome silver cup, value two and a half guineas for 12 blooms.

Fifth Class. — First prize, handsome silver fish slice, value two and a half guineas, for 9 blooms.

Second prize, a pair of handsome silver ladles, value one and a half guineas, for 9 blooms.

SEEDLINGS. — First prize, a handsome pair of salts, value a guinea and a half.

Second prize, sugar tongs, value one guinea."

SHEFFIELD GRAND HORTICULTURAL SOCIETY. — "On Wednesday and Thursday, Sept. 14th and 15th, the exhibition of flowers, fruits, plants, and vegetables, open for competition to all England, took place at the Botanical Gardens. Beautiful as were many of the exotics exhibited in the conservatory, particularly the orchideous plants and other varieties, the chief point of attraction was manifestly the Dahlia tent, and certainly the extensive and diversified display, consisting, as it did, of every conceivable variety of this fine flower was eminently interesting."

The prizes awarded in this show were more numerous than in the last and of greater value. Mr Widnall, received the highest prize, the value of £15, one prize of £7, and another of £4 1s.

The following named Dahlias appear to be the most conspicuous exhibited, vix. Dodd's Mary, Hon. Mrs Harris, Bride of Abydos, Madeline, Ariel, King Otho, Beauty of Perry Hill, Tarrant's In-

vincible, Beauty of Cambridge, Clara, Mountjoy's Burgundy, Criterion, Lady Ripon, Yellow Perfection, Sir H. Fletcher, Venosa, Metropolitan Perfection, Cedo Nulli, British Queen, Metropolitan Calypso, Glory, Venus, Countess of Liverpool, Springfield Rival, Beauty of Camberwell, Hadleigh Champion, Beauty of Lullingstone, Ne Plus Ultra, Colville's Perfection, Squibbs, Flora, Metropolitan Lilac, Angelina, Brown's Bronze, Mrs Wilkinson, Well's Paragon, Newick Rival, Widnall's Paragon, Prince of Orange, Gem or Royal Adelaide, Beauty of Slough, Vulcan, Lady Ann, Paris, Bishop of Winchester, Crimson Triumphant, Scarlet Perfection, Brown's Corinne, Brown's John, Brown's King of the Fairies, Brown's Ariadner Brown's Blue Beard, Brown's Queen Elizabeth, Widnall's Venus, with a multitude of other varieties.

J. B.

# ART. VII.—Call at the Green-House of Marshal P. Wilder, Esq., Hawthorn Grove, Dorchester.

We have had the gratification through the politeness of the proprietor of the above named establishment, to witness the finest display of Camellias, probably, ever beheld in the United States. We cannot do that justice to this choice collection of popular plants that we could wish, as our experience and observations, has been, heretofore, rather limited in relation to this plant; but for the benefit of those who are fond of this flower, and are desirous of obtaining a small collection to adorn their parlors or green houses, we shall make the attempt and direct their attention to a few varieties which more particularly struck our fancy. Each variety is so beautiful, that it is a difficult task to make a selection from them, and say which we would take were we confined to a dozen varieties.

Mr Wilder has spared neither pains nor expense, to make his collection of Camellias complete; and his efforts have been crowned with success. We have been assured by an amateur who has seen some of the finest collections in England, that the one in question is equal to that of any private one, in that country.

It contains rising of 300 varieties, many of which have never bloomed in this country. The number of plants is seven or eight hundred. Among them are from 70 to 80 seedlings, from the

first to the third year's growth, raised by Mr Wilder, from which, some fine varieties may be expected in a few years. Some of the plants are eight or ten feet high, imported last spring. When we consider the dangers to which plants are exposed during their long passage across the Atlantic, we were struck with admiration at the excellent order in which these large plants appeared to be in, producing luxuriant foliage, and even perfect flowers. Strong growth, and healthful appearance is the character of the whole collection. A large plant of the old white variety, presented a splendid appearance, having over sixty perfectly formed and fully expanded flowers upon it, together with a multitude of buds in different stages of progression, and we were informed that very many had been cut from it during the past fortnight. By the way, we would recommend this variety as one to select, to make up a small collection. The regularity of its shape, and spotless purity of its white, will always give it a passport to good company. Gerrard would undoubtedly have said, had he been privileged in his day to have seen it, that it was fit "to deck up the bosoms of the beautiful." As an ornament to the brow or bosom of the fair, it is unrivalled by any flower, and must always be in demand, for parties, &c.

The following varieties were in bloom, which will soon be succeeded by numerous others, of which we shall be able hereafter to make known to our readers.

Conchiflora Speciosa Venosa Herbertia Fimbriata Eclipse Chandlerii Althæflora Rosa Mundi Princeps Anemone flo. alba Lindlevii Alba plena Decandollii Compacta Rubra plena Woodsii Incarnata Rossi Pæoniflora Wardii Pompone Anemone flo. striata Grandissima Splendens Pensillata Variegata plena Fascicularis Decora Kissi

Crassinervis

Pomponia semi-plena

Baumaniana Wiltonia Variabalis Maliflora Acubæfolia Intermedia Warratah Dianthiflora Rosa sinensis Papaveracea Charles Auguste Oxoniensis Diversifolia Plumaria Clintonia Rives nova Heterophylla -Punctata simplex Cliviana Charlemagne Imbricata Punctata

Fimbriata is a fine white variety, not so common as alba plena, or the old white, as it is called, and like that universally admired; its petals are delicately fimbriated, (fringed,) and its white as pure as the other variety.

Dorsettia

Punctata. (Spotted.) Of this variety there was a plant with a number of its splendid flowers, the ground of the flower is a flesh color, beautifully spotted and striped with deep red.

Eclipse. This superb flower eclipses all the variegated sorts, and we may say perhaps, all the rest; it throws the other varieties, beautiful as they are, quite in the shade, and therefore properly named. It is perfectly carnation striped, red on a white ground.

Rosa Mundi is another variegated species similar in color to Punctata, but inferior to it. These three last named varieties, are said to have been raised from seed produced in the same capsule or seed vessel.

Chandlerii. A very fine variegated Camellia, of a crimson color, blotched (not properly striped) with white. The flowers of this variety, are subject to considerable variation; some being nearly selfs (without spots or stripes,) while on other flowers of the same plant, the white predominates.

But more variable than the last is the variety Pompone, producing sometimes white flowers, and at the same time deep pink flowers upon the same plant; at other times the flowers will be tinted or striped with pink. This is probably synonymous with variabilis, and some other varieties which have been confounded together.

Dorsettia presented a magnificent appearance. 'The plant was

covered with many flowers, resembling full blown pæonies; the color a dark pink with delicate white stripes.

Variegata plena, is the oldest variegated Camellia; its petals are parti-colored, red and white; as this variety is not so high priced as the other variegated sorts, it is recommended to those whose means are limited; it is highly esteemed and fine, but does not compare with most of the other parti-colored varieties.

Incarnata or Lady Hume's Blush has a very delicate and well formed flower, flesh colored or blush.

Oxoniensis. A very beautiful variety, and the finest pink in the collection.

Imbricata is so called on account of its petals being closely imbricated (laid over one another like scales;) it is a fine variety, of a rosy red color, and frequently spotted with white.

Althæflora has very deep crimson flowers, the darkest color in the collection, in shape like the Althæ.

Rubra plena had upon it a flower remarkable on account of its large size, measuring more than six inches in diameter, resembling a double Chinese Hibiscus.

Acubæsolia is so named on account of its leaves being variegated or spotted, like the Acubæ Japonica, or gold dust tree.

Rives Nova is a magnificent variety. Its flowers are of the finest scarlet not unlike the color of Lobelia cardinalis.

Wardii is a fine seedling of our countryman, Mr Floy, who has a large collection of Camellias, the color, deep crimson.

Some of the single varieties are very beautiful, and more attracting to the botanist than the double. At the head of these stands speciosa, very large and showy as the name indicates; color delicate red. It is curious to observe the first departure from the natural to the improved state of the flower, as the gardener would say. This we observed in the variety Pensillata, where the staminas are transformed into petals. This is a single red flower, producing at first, perfect staminas, which change eventually into narrow petals, or frequently partaking of the character of petals and stamens. The same may be seen in some other single varieties.

Warratah is one of the common old varieties singular in its construction, and a few steps in advance of Pensillata. Its corolla consists of an outer guard of broad petals with a hemispherical centre, composed of a multitude of small, contorted or curved petals; color deep red.

The arrangements of the Camellias is very fine, producing a striking effect as we enter the house. Besides these, Mr Wilder, has a very large collection of rare and beautiful plants. Of the Acacia tribe, there are about thirty species. A. spectabile exhibited its showy yellow flowers in globular heads. The foliage of this family is very fine, presenting in its different species a great diversity of form as pinnate, bi-pinnate, lanceolate, linear, &c. We noticed one species, whose foliage partook of the pinnate and the lanceolate form in rather a promiscuous manner; first producing lanceolate, then a pinnate, or a lanceolate leaf terminating in pinnate, or pinnate ending in lanceolate.

Among other interesting objects, we noticed with pleasure, a collection of Ericas of about forty species, mostly small but very healthy plants. This numerous tribe of beautiful plants contain more than three hundred species. In England, houses are frequently devoted to them alone. Hitherto our American collections have been rather deficient of these plants. It is gratifying to know that the number of species are yearly increasing by importations from the large European collections.

Mr Wilder has made an addition to his conservatories the past season of twenty eight feet, for the purpose of growing plants requiring more heat. This department we found well stored with a great variety of Amaryllis, Ixias, Gladiolus and other Cape bulbs, and many other rare plants. The Amaryllis, were throwing up luxuriant spikes and will soon be in flower. Crinum Amabile was also giving like symptoms of a speedy bloom.

We saw for the first time a vigorous plant of Clianthus puniceus, a showy plant, at present-very scarce in this country. We anticipate the pleasure of seeing it in bloom in the course of a year. We have seen it figured in the English works, and has been described in some back numbers of the last volume of the Horticultural Register. It has large clusters of pendulous flowers of a deep bright crimson color. It is sometimes called the crimson glory flower.

In one corner, over the reservoir, there is a respectable collection of Orchideous plants, thriving in the heat and moisture of the place. It gave us pleasure to learn that their cultivation is not attended with the difficulty that has been anticipated.

This unique and singular family, are attracting much attention

in England, and its numerous species are eagerly sought after and purchased at extravagant prices.

Doryanthes excelsa, among other rare plants, is found in this collection, and this specimen is said to be the largest of the kind in the country.

The mode of giving the bottom heat was new, and interesting to us. It is done by heating a cistern of water connected by pipes of hot water with the boiler instead of a chamber of stones heated by steam, the usual mode. It is an improvement upon a mode recorded in Paxton's Horticultural Register, vol. 4, No. 45, invented by Mr Sweetser of Cambridgeport, and first put into operation by him. There is no doubt but what it will be of great advantage to the amateur as well as to those who force cucumbers and other vegetables for the market; and with improvements that Mr Sweetser has suggested, will, we think, supercede the use of horse manure for the same purpose. We see no reason why forcing may not be carried on through the winter months with a degree of certainty unattainable by the usual mode, as the temperature can be regulated at pleasure in the most severe weather.

The following is a description of this method as recorded in the work alluded to. "The cistern of water is heated by small steam pipes, which are introduced near the bottom, leaving only sufficient drainage to take away the condensed water. The depth of the water in the cistern is about one foot, which is warmed generally about twice a day, by means of two one inch steam pipes, each going to the further end of the cistern, and returning again in the opposite direction; by this means the heat is very equally distributed. At each end of the cistern a small passage is left for the purpose of ascertaining the temperature of the water, and which will, if left open, admit considerable humidity to the house or pit.

Across the cistern are laid joists which support a paving stone or brick, laid without mortar, on which is placed a bed of broken stones or bricks, about one foot in thickness, which towards the top are about the size commonly used for macadamizing the public roads; this is again covered with a bed of ashes, in which pots are placed, as in the usual way.

In lieu of the paving on the joists, boards, hurdles, or any other materials capable of supporting the weight above, is equally applicable. This mode has been in successful practice nearly four years, in the garden of Mr Sturge, of Cambridge, near Bath, who consid-

ers it greatly superior to the use of either dung, leaves or tan, &c. the temperature being at all times under the absolute control of the attendant.

This mode seems to have originated with Mr Sturge, I having heard of no other person using it previously to his trying the experiment."

The improvement consists in heating the cistern of water, by means of the circulation of hot water in pipes instead of steam. The water enters and leaves the cistern on a level; but when it leaves the cistern, the pipe drops down and forms an elbow and returns again into the boiler; thus when the water is heated in the boiler, the hot water circulates freely through the pipes, heating the water in the cisterns. The warm air from the water rising, passes through the bricks, stones or whatever is laid over the cistern and communicates with the soil.

The bricks are not laid in mortar, as that would prevent the passage of the heat. The bricks or stones once heated retain their warmth for a long time after the fire is out.

The length of the cistern which Mr Wilder has built is 18 feet long, 2 feet wide; the water 6 inches deep; the pipes three inches in diameter, which heats a bed from 3 to 4 feet wide and 18 long.

Some further description we hope to be enabled to give, together with a plan at some future time.

J. B.

## ART. VIII.—Call at the Green House of MR SWEETSER, Cambridgeport.

WE design to continue our call at the various greenhouses in this vicinity, while the Camellias continue in bloom, that we may not only acquaint ourselves with the different varieties, but also endeavor to describe them to our readers. In doing this, we shall avoid repetition as much as possible, and not describe a variety the second time unless there is something remarkable about it.

When the popularity and beauty of this flower is considered, we shall undoubtedly, be excused, by those who have no particular interest in the plant, if we do make frequent mention of it, especially as the present is the season when it appears in its greatest splendor; and those who have a taste for, or cultivate it, will be gratified, we have no doubt, to have these descriptions given.

The collection now under consideration consists of about one hundred and fifty varieties, embracing some of the finest in the country. There is also about eighty seedling plants from one to two years old. Mr Sweetser takes upon himself the whole care and management of his plants; devoting the hours before business in the morning and the evening to the pleasing task. His Camellia, or green house is a good model for those who wish to build for a moderate collection of plants. It is thirty feet long, and fifteen feet wide. The following camellias were in bloom: Coccinnea, fine scarlet. Oxoniensis: there was a splendid specimen of this plant, large flower, fine pink color penciled with white. Papaveraceæ, a superb single variety; deep vivid scarlet flowers, five inches across. Hosackii, single red with stamens transformed to petals. Wemaira, semi double white, not fully expanded. Mutabilis, superb flower; red, becoming spotted or striped with white. Atroviolacea, deep red pencilled with white. Imbricata. Old variegated. Acubæfolia. Grandistora nova, fine large single red. Decandolli, fine pink with white shales. Rosiana Rossii and Rossi. These two varieties we should think were one and the same; the first named seemed to have sported a little, having a few touches of white; beautiful variety or varieties, color deep crimson; flowers large, having large petals interspersed with numerous small ones. Goussonia, deep pink, variegated with white. An interesting variety with miniature flowers; the name of it lost. Old double white. Rosaflora, fine rose color. Hallesia, light red striped. Pulcherrima, a beautiful variety, blush delicately striped with red. Sweetii, splendid variety, fine shape, petals fine deep red, centre variegated. Paradoxica, single red with a few white stripes, good color. Calvert vova, fine red. Imbricata.

The house is not exclusively devoted to Camellias, but contains numerous fine plants. One of the most interesting is a plant of the Myrtle leaved orange (Citrus myrtifolia,) displaying its small golden fruit. A fine large plant of Laurestinus, (Viburnum tinus) was loaded with its white fragrant flowers. The common Sedum exhibited a large spike of its yellow flowers. Among the rest there was a large plant of the India Rubber tree, (Ficus elastus.)

In another house Mr Sweetser has a good collection of cactuses and other plants. In this building there is a forcing pit already alluded to in another communication, which has been in operation a few months and continues to work well, and we have no doubt, but that it is an important improvement.

J. B.

#### ART. IX. - Miscellaneous Articles.

Everbearing Raspberry. — The Genesee Farmer says, in their 4th volume, page 371, we copied an article from a Cincinnati paper, relative to a new kind of Raspberry which had been found near Lake Erie, by the Shakers, and which continued to bear throughout the summer and autumn. As the description was rather vague, it was supposed by some to be only the Rose flowering Raspberry (Rubus odoratus,) and excited very little interest as far as appears, amongst our horticulturists. We are assured however, that it is deserving of great attention. We have lately conversed with a professional gardener who cultivated it in the State of Ohio, and on account of its furnishing at all times throughout the season, a liberal supply, he thinks it more desirable than any other sort that is known.

From his description we were led to surmise that it is a variety of the Purple Garden Raspberry (R. Idæus,) though he was inclined to a different opinion, believing it a new species. Like this kind, however, the most vigorous shoots bend over, and touching the ground, take root, by which process it is readily increased. This feature will sufficiently distinguish it from the Rose flowering Raspberry. The fruit in shape is longer than the wild black Raspberry (R. occidentalis,) and it approaches very near in size and excellence to the Antwerp, though it is not musky like the latter. In the spring the stems of the last year's growth, throw out branches like the common kind, and on these the first crop is produced; but new shoots also continue to rise from the root throughout the season, and successively to come into bearing. In this circumstance its peculiarity consists. The fruit from the new stems or second crop, is considered the finest.

We deem it proper to lay this statement before the public; and we hope that our enterprizing nurserymen will speedily take measures to introduce it into this quarter. Our informant knew of but two places in the Western Country, where it was cultivated; namely, by Nicholas Longworth, Cincinnati; and by the Shakers near Lebanon in Warren county. It is not improbable, however, that the Shakers of Niskayuna near Albany, from an intercourse with their brethren of Ohio, — have it already in their possession; at

least, it would be well for horticulturists in that vicinity to inquire; And in the mean time, we hope that no opportunity of obtaining it from the west will be omitted.

Extract from a letter from Widnall, the celebrated Dahlia grower, in England.

The following extract of a letter from Mr Widnall will show to what extent Dahlias are raised from seed, in England, for the purpose of obtaining fine varieties; also the encouragement that is given to successful growers.

After describing various fine new seedlings, he says, "These are the very best seedlings, out of 30,000 plants, which covered more than three acres of ground, and I have about the same quantity of this year's seedlings, none of which will be sent out before May, 1838. These seedlings which I now offer to you, obtained prizes at every exhibition they have been shewn at; which was at the Metropolitan shows at Bedford and Birmingham, at Sheffield, at Hartford and Cambridge; all which shows were open to all England for competition. I obtained in ten days last September for seedlings and named flowers prizes to the amount of 107 pounds sterling," (about 475 dollars.)

The following descriptions and prices of some of his finest seedlings, will give some idea of the value attached to them in England, and the encouragement held out to Dahlia growers.

- No.  $\frac{1}{5}$ . This I have just named Jnliet, color a rose, inclining to rosy purple, superior in shape to Widnall's Perfection; height three feet; price £7.
- 3. Not named; a bright yellow tipped with scarlet orange; fine shape; height 3 feet; price £1 10.
- $\frac{5}{5}$ . Not named, ground dark purple, beautifully shaded and striped with crimson; height five feet; price £2.
- 281. Just named Golden Sovereign, a deep gold yellow; height 4 to 5 feet; price £5.
- C. Not named; a white ground, edged with the same color as the Queen of Dahlias, and surpasses every Dahlia yet seen for shape; 3 to 4 feet high; price £10.
- C. Just named, Marchioness of ———, fine white ground, exquisitely edged with beautiful rose; large flowers and very fine shape; three feet high; price £10.

 $\$  Not named; a white finely margined with rosy lilac, cupped petals; globular shaped; very fine; 4 feet high; price £5.

These plants are yet in Mr Widnall's possession and will not be sent out by him until May, 1837. With the patronage growers receive in England for fine new varieties, there is no wonder that they have been multiplied to such vast extent.

Eds.

ON THE GROWTH OF PLANTS, &c. - When Plants advance but little in their growth, and assume a very dark or blue green color, it shows a want of water, or an obstruction to the action of the capillary attraction; and when a plant is of a light green color, and is diminutive and puny in its growth, and there is evidently no want of water it shows a want of carbonaceous matter, or a general deficiency of nutriment. If plants and trees grow very luxuriantly in branches, forming large leaves, and producing little fruit, it shows that there is a luxuriant supply of hydro carbonate, or an excess of carbonaceous matter, lying at a great depth from the surface, and a want of oxygen; when the leaves and branches are deformed and distorted by blisters and blotches, and by irregular contractions and contortions of the stalks, fibres, veins, or ribs of the leaves or when tumours break out on the leaves and shoots, it shows that an excess of prutrescent carbonaceous matter, containing nitrogen surrounds the roots. - Hayward on Horticulture.

Death of Mr Cunningham. — Intelligence has been received of the death of Mr Richard Cunningham, the Colonial Botanist, at Sydney, New South Wales. The unfortunate man was murdered by savages in the interior of the country, whither he had accompanied an expedition, whom he unfortunately wandered away from, in search of plants, (as was his duty as a Botanist,) and was lost in the bush, and never seen afterwards; but from intelligence gained from some of the natives, it was discovered that he was murdered by savages, who mistook him for an enemy. Mr C. was a very able botanist, and of an amiable and obliging disposition, he was beloved and respected by all who knew him, and his death is universally lamented by every colonist in New South Wales, and his friends in England.

Thus within the short space of two years, we have to mourn the loss of three eminent British collecting Botanists, Mr D. Douglass, who met his death in the Sandwich Isles; Mr Drummond, who fell

a victim to the unhealthiness of the Mexican climate; and the above unfortunate Mr Cunningham, — all three of whom may be said to be martyrs to the science of Botany, and whose labors will never be forgotten from the many beautiful additions to our flower gardens, which each of them introduced, and many of which bear their names, and will transmit their memoirs to the latest posterity. — Flor. Cab.

Division of Perennials.—Aster alpinus, ramosus, acris, hysopifolius, amellus, linarifolius, and punctatus, are favorites in almost every garden; whilst the tall robust species are nearly discarded, or only used for filling up vacant places in shrubberies, where little care is bestowed upon them. There are, however, few plants that will more amply repay for a little labor in cultivation, than many belonging to this genus. Every season, early in March, take up all the free growing plants, replant only three suckers of the spreading sorts, and only a small piece from the outside of the more compact growing kinds. As they advance in growth, keep them carefully tied to stakes, and in autumn, they will produce finer flowers, and in more abundance, than if the whole patch had been left to send up a great number of flower stems, to the detriment of each other.—Ib.

PROPAGATING THE PEACH. — 1st. We gather the stones in the fall, which we bury about an inch under ground, (high and early ground is preferred, as the pits will sprout earlier in the spring,) spreading them singly, but as closely as you can, in order that the frost may have its full effect upon them. The best time for putting them in the ground is the last of October, but any time in October or November will do.

2d. Preparing the Ground for the Young Trees — Select a rich and middling dry piece of ground, which if very rich, will do without manuring, but if not, manuring is indispensable. Short and old manure is the best, and if some rich dirt be mixed therewith, I think all the better. The manure should be spread along the furrows, which should be made with a plough four feet apart. If any other manure be added after, I would recommend lime or ashes. The ground should be ploughed as well as harrowed well in the first place.

3d. Transplanting. - This should be done as soon as the pits

begin to sprout in the spring, by dropping them in the rows already prepared for them, about 8 or 9 inches apart, and covered about an inch or more deep. Some nurserymen let the young sprouts grow 6 or 8 inches high before they transplant them, but the former way I think the best. The young trees should be planted and hoed as often as necessary, in order to keep them free from weeds and grass, say three or four times each, the last just before budding, and not afterwards that season.

4th. Budding. - Select from the healthiest trees the scions of the kinds you wish to propagate, cut off the leaves and keep them in water, at least, the butt ends, (those buds which have three leaves on are the best.) They may be kept in this manner three or four days. Then take the scion in your left hand, holding the butt end downwards, enter your knife about half an inch below the bud, and cut upwards about a quarter of an inch above the bud, taking the wood with it, and then cut across the twig deep enough for the bud to come off; then with the point of your knife take out the wood from the bud; then make a transverse cut in the stock to be budded, about three or four inches above the ground, (first trimming off the leaves and limbs about six inches above the ground;) from the middle of this cut make a slit about half an inch downwards, then with the point of your knife open the bark on each side of the slit, by the transverse cut; enter the lower end of the bud therein, bearing it down with your thumb and finger, till the top side of the bud comes just below the first tranverse cut, then with bark or yarn wind above and below the bnd, in order to keep close to the wood. In twelve or fourteen days the bandages may be removed. The time of budding may be from the 20th of August to the 20th September, perhaps later sometimes. In the following spring, when the buds grow three or four inches long, the old stalk should be cut off about an inch above the bud. lu the following fall or spring you may set out your orchard, putting the trees about twenty feet apart. The ground should be rich and dry, not springy. Manuring is indispensable, unless the ground be very rich. Corn or potatoes may be planted among the trees, with benefit to them for three or four years.

### ART. X. - Massachusetts Horticultural Society.

#### EXHIBITION OF FRUITS.

SATURDAY, Dec. 31, 1836.

PEARS. — Burgomaster, from Judge Heard, Watertown, and from Hon. P. C. Brooks, Medford.

Passe Colmar, from B. Weld, Esq. Roxbury.

SATURDAY, Jan. 7, 1837.

By L. P. Grosvenor, from his farm, Pomfret, Conn. Chandler Apples, a large fruit, dark brown, next to the skin, green, clouded with brown in the shade; flavor excellent. This apple has been extensively cultivated in Pomfret, for the last fifty years, and is well worthy a place in any collection. It is not the Chandler apple described by Mr Kenrick. A small red apple, of good flavor, called the Queening — not rightly named.

From Mr James Eustis, South Reading, a large red apple, name unknown.

From the President, Marigold and Hubbardston Nonsuch apples. Lewis Pears, in their prime; Passe Colmar and Wilkinson.

SATURDAY, Jan. 14, 1837.

Pears. — By Mr Manning. Nelis D'Hiver (La Bonne Malinoise) a fine fruit of middling size, and stated by Mr Manning to be a great bearer. Newtown Virgalieu, a breaking fruit, in form and size resembling the Chaumontelle.

APPLES. — By J. M. Ives. Michael Henry Pippin, of Coxe, a fruit of about the quality of the Rhode Island Greening. Carhouse, or Gilpin of Coxe — a most abundant bearer, small size, not yet in eating. Fama Gusta, from New Jersey — rather too acid for a table, not answering to the description of Coxe. Also, an unnamed fruit, from a tree of a remarkably beautiful and delicate growth; very hardy, — the fruit grows at the extremities of the branches, with very small footstalks, ripe in April.

The above is the report of Mr Ives, which was forwarded by him from Salem, together with all the specimens of fruit which were exhibited this day. We have only to add, that the Nelis d'hiver, though not handsome, has the fine flavor of the Chaumontelle. The Newtown Virgalieu, though only tolerable for eating, is fine for baking — and a most extraordinary productive fruit, therefore a most profitable kind for cultivation. Of the Apples, the Michael Henry Pippin, was the handsomest fruit, and the finest as to flavor.

#### QUINCY MARKET.

Reported for the Horticultural Register.

APPLES, Baldwins	barrel	2 00	2 25
Greenings,	6.6	2 00	2 25
Russetts,	"	2 00	
PEARS, Iron,	bushel	3 00	
CRANBERRIES,	"	6 00	8 00
CHESNUTS,	66	3 00	3 50
CAULIFLOWERS,	head	25	75
CELERY, White Solid, and Rose Colored,	root	12	25
CABBAGE, Red Dutch,	dozen	50	62
Green Globe Savoy,	66	57	75
Large Drumhead,	"	50	75
HORSE RADISH,	pound	10	12
RADISHES, Early,	bunch	12	
POTATOES, Chenangoes,	bushel	67	75
Eastport,	46	75	
SQUASHES, Crook neck,	pound	5	6
Valparaiso,	66	5	6
SHAGBARKS,	barrel	4 00	4 25
ONIONS, White Portugal,	bushel	1 00	1 25
Red,	66	1 00	1 25
Bunch Onions,	hundred	4 00	4 25
PICKLED CUCUMBERS,	gallon	37	44
DRIED APPLES,	pound	4	5
LONG BLOOD BEETS,	bushel	1 00	
PARSNEPS, Large Dutch,	66	75	1 00
TURNIPS, White Flat	66	50	
Ruta Baga	"	50	
. Long Yellow French,	66	50	

The stock in Market is pretty good for the season. Pears there are not many. Chesnuts are scarce; the whole stock comprise but a few barrels, and they from New York. Cranberries are exorbitantly high. The season proved very unfavorable and but few bushels in the market. Cauliflowers do not come in. very good as yet. Celery is very fine. Tombs & Staples have the best We noticed a few bunches of Radishes in Mr Gale's stall. Squashes are about out of the market. Very few of Crook Necks. A cargo of Sicily Squashes arrived during the month and were disposed of immediately at 4 to 6 cts. Our next report will contain the first fruits of the season. Yours, S. B.

Boston, Jan. 23, 1837.

### HORTICULTURAL REGISTER.

AND

#### GARDENER'S MAGAZINE.

MARCH 1, 1837.

ART. I. — On the Strawberry. By N. Longworth, Esq. Cincinnati, Ohio.

In your Magazine for August, 1835, I was gratified by your description of the different varieties of Strawberries cultivated in your vicinity. But I was surprised to find the true character of the Strawberry so little understood. I have met with no English Gardener, possessed of the requisite knowledge, to raise this delicious fruit in abundance. For the information I possess on this subject, I am indebted to an illiterate market gardener. In speaking of the Hudson Bay strawberry, you state "there are sterile and fertile plants. and that the former should all be destroyed." If they are, and none but your fertile plants are retained, from ten acres of vines. you cannot raise a single perfect fruit. In this strawberry, the male organs are so defective in the fertile plants, as not to be able to impregnate them, and in the sterile plants, the female organs are so defective, that they cannot be impregnated. I speak advisedly. The fertile plants, never do, as many imagine, become sterile by running. I have kept separate patches in my garden for fifteen years, and never had a fruit from either, unless for experiment, I have, when in blossom, set a sterile plant by the fertile ones. Market Gardeners, who understand their business, can tell the barren from the bearing plant, as well when out of bloom, as when in bloom. It is a secret, too profitable to them, to divulge it. male, or rather the plant in which the male organs predominate, are more vigorous than the bearing vines, and producing no fruit, produce ten new plants, where the bearing vine produces one, and

soon take sole possession of the bed, by rooting the others out. You say the Early Virginica, is a shy bearer. Properly understood. it is one of the most abundant bearers. This variety, has its sterile and fertile plants; but different from the Hudson, its sterile plants, produce fruit, but about one half the blossoms fail, and the fruit is small, and many of them imperfectly formed. The fruit is very sweet, and ripens earlier by two or three days than it does on the fertile plants. The fruit of the fertile plants, is large, finely formed, and not one blossom in a thousand will fail (unless allowed to stand too thick) if there be as many as one sterile, to ten or twelve fertile plants. The sterile Hudson, will impregnate the fertile plant of this variety, but the Chili will not impregnate either the Hudson or Scarlet, which proves they are distinct species, and settles that mooted point; to wit, that all are not, as Knight supposes, mere varieties. When last in Philadelphia, and advancing these doctrines to the intelligent horticulturist, Mr Buirt, he expressed his perfect conviction that Keen's seedling, was an exception to my rule, and was a never failing bearer, both in England and the United States. I saw his beds of Keen, then in full bearing, with not a barren plant among them; but his Hudson's were adjacent, had sterile plants, and to me at once explained the reason why his Keen's were productive. He had a few plants of the fertile Keen strawberry, in a part of his garden, entirely separated from all others; and we agreed those plants should settle the question. They were large vigorous plants, in full bloom. He wrote me three days since, that they did not produce a single perfect fruit, and but very few half formed berries. A fertile Chili, or Wilmot's superb, I have never seen. The blossoms are of monstrous size, but the female organs are mostly defective, and generally, not one blossom in twenty is impregnated. I imported five celebrated varieties from England. Not one blossom in twenty produced a perfect fruit. The female organs were defective. I have met with but two varieties of the strawberry, in which the male and female organs were perfect in the same blossom. I have never seen a white variety that had not both perfect, but the fruit was always small. The same is true, of all the Alpine monthlies, I have seen. I have seen the native strawberry, in different States of the Union, but I never met a plant that had the male and female organs perfect in the same blossom. I have found our most intelligent Botanists,

incredulous on this subject. It is the more surprising to me, as it was discovered by Duchesne a correspondent of Linnæus, to whom he communicated the discovery. In raising pure seed, both kinds are produced, as I have frequently tested. Before I became enlightened on this subject, by a man who could neither read nor write, a quarter of an acre of ground would not supply my table with fruit, now, thirty feet square will do it. When in blossom, the most inexperienced will at once discover the difference. The barren blossoms, are double the size of the bearing ones, and the stamens may be seen at the distance of twenty feet. In the bearing plants, the stamens are not perceptible, till the hull is separated from the blossom, when they may be discovered, hid beneath the female organs. In the sterile plants, the female organs are hid by the stamens. In the Alpine monthly, both are perceptible, and perfect. English writers say, they have discontinued the cultivation of the Hautbois Strawberries, from their disposition to become barren by running. It is a mistake. A bearing plant, never did produce a sterile one. In the Hudson Bay in particular, they have at all seasons, distinctive marks, and can be easily distinguished. These marks, are well known to most of the Market Gardeners about Philadelphia, and they make their profit by concealing their knowledge.

I did import one variety of Strawberry from England, that to a certain extent, disappointed me. The male organs greatly predominated, yet from one half to two thirds the blossoms were impregnated, and produced fruit of a medium size, and I have found it valuable to plant with the fertile Hudson, Early Scarlet and other varieties of the same species. But the Market Gardener before alluded to, in whose observation, after forty year's practice I have great confidence, assures me, that to produce very large fruit, the sterile plant of the same variety, has the advantage. I challenge any Horticulturist in the Union, to produce a single vine, of any variety, that shall produce large fruit, unless a considerable proportion of the blossoms shall fail for want of impregnation.

Cincinnati, Jan. 1837.

ART. II. — Plantations of Forest and of Timber Trees, Osage Orange (Maclura aurantiaca) Climate, Soil. — Communicated by Mr WILLIAM KENRICK.

I am induced at this time to write on the subject of our Forests and our Timber Trees, by an article which I lately saw in that excellent publication, the "Cultivator," which is edited by Judge Buel, at Albany. In that publication he remarks that "the Osage Orange is tender, even more so than the Morus Multicaulis." He then proceeds to state as evidence, that with him, the Osage Orange had invariably been killed down every winter. His observations in regard to this tree were probably elicited by an article written by me, and which I saw republished in some of the public journals of Albany and elsewhere, concerning this tree, wherein I had asserted that the Osage Orange is hardy, as it had endured uninjured, the rigors of the last seven winters, near Boston.

How shall we reconcile the truth of both these statements, which are so directly opposed, except it be by a reference to some very material difference of climate, between Boston and Albany, although both are situated nearly, if not precisely, in the same parallel of latitude? This difference of climate I shall shortly and briefly proceed to show: stating also, all the material evidence on which my assertion was founded.

Here stand the trees of the Osage Orange in a bleak and exposed situation, the living witnesses of the truth of my assertions. For so far as I can know, there are no others of any considerable size in the State, except only, at the Botanic Garden, in Cambridge. Both my trees stand on the hill where I reside; the one in a Northerly exposition, the other Westerly and Northerly. The one measuring seven inches in circumference, and the other eight inches near the ground. The one ten feet high and the other eleven feet. Here they stand, and where they have ever stood since the spring of 1829, without any protection, and yet uninjured during all our late most unusually rigorous winters; and I invite any one to see them; the soil rather springy, and loamy, the foundation a hard pan. My supplies of this tree have generally been very limited, as I always purchased most all for the supply of my orders: and I had never lost a tree by winter.

Yet having in December last, read the account and the sweeping assertion of Judge Buel, all which was perfect news to me, and reflecting that on some grounds of mine in a lower situation, I had a few thousands of these trees, which I had purchased last spring of Mr D'Arras, of Philadelphia, and reflecting that these trees were at that time young, and but of a single summer's growth, and being received and set out late in a bad summer. I concluded as the tree was yet very rare, that prudence dictated caution. It was not till the present winter had set in, and the ground was hard frozen, that I caused horse manure (a practice not usual) to be spread around their trunks and over the roots of all, leaving their whole tops quite exposed: as we know by experience, that even in this climate, the young trees of but a single summer's growth, of the Cherry, the Quince, the Plum, and the Pear, and some other kinds, require protection during the first winter, on a soil rendered defenceless by cultivation, and we never leave them exposed till the second winter, when if strong and well rooted, they require no more protection.

The fact seems to be, that the climate of Albany, is subject to extreme and killing cold during winter from its position, which is quite unlike that of Boston. I have never sought particularly in our Journals, to ascertain the extreme degree of cold of that city, but only do recollect, that times have been named when the thermometer had descended to 24 degrees below zero, at Albany; and I think, as low as 30 degrees below zero at Troy, which is but a few mlles above Albany.

My attention was recalled to this subject, by Mr Douglas, an intelligent gentleman from Albany, who called on me last winter, who spoke of the cold of the winters of Albany, when compared with ours, although both are in similar latitudes. Also by a letter from Judge Buel himself, an extract of which is recorded in the New England Farmer for August, 1829, wherein he has stated as follows.

"The past winter has been dreadful to our Cherries, Plums, and Pears. We probably lost 5000 in our nursery alone. The Peach and Plum blossomed poorly, and the fruit as well as that of the Cherry and Pear have been almost totally destroyed by insects and by frost."

Again, last summer, and during two or three days while I sojourned at Hartford, in Conn. I became acquainted with E. W. Bull, Esq. of that city, a most respectable and intelligent gentleman, and an accurate observer. He stated to his certain knowledge, that the whole valley of the North River was another and different climate from ours at Boston, and subject to the most intense and destructive cold during winter, and especially above the Cattskill mountains. He mentioned in proof, the evidence of Mr Wilson, who is the partner of Judge Buel in their extensive nursery establishment. Mr Wilson had stated to him that they were nearly discouraged as to the cultivation of the Cherry tree, so liable were they to be destroyed by their winters. Mr Bull also stated to his own knowledge, that the whole valley of the Connecticut from Canada downwards to the sea was another and different climate from ours at Boston. He mentioned as evidence, the destruction of the Pear, Peach and Cherry trees on his own estates, within the limits of that city, part of which I witnessed.

I saw also, in the summer of 1835, at Mr Lyman's in Manchester, near the Connecticut River, where a whole nursery of Cherry trees of three or four years growth, had been killed by the previous winter. Also, I received a letter in the spring of 1834, from Mr Welles, of Glastonbury, lower down the river, stating that in the preceding winter, many of his large bearing trees of the Apple, Pear and Cherry had been cut off and destroyed entire.

Mr Joseph Davenport, of Colerain, Mass. and a critical observer, also has informed me, that during his frequent travels up and down the Connecticut river road in 1835, he had observed in particular situations in Northampton, that many of the Mountain Laurels (Kalmia latifolia) and also the Buttonwoods, had there been killed by the previous winter. Similar destruction he had also witnessed in various places along the road, on the west side both above and below Springfield Bridge, in the Cherry trees, the Pear, and the Apple, and particularly the Peach trees, whose destruction in certain situations was complete, caused by the severe cold of the previous winter.

This intense degree of cold, is caused by the position of the valleys of these rivers, which all run from the North, or in the direction from Canada due South to the ocean. And the prevailing winds throughout the valleys of these rivers, is seldom across the stream, but in their longitudinal direction, up or down. This direction they acquire by the reflection of the winds as they strike the

sides of the hills and mountains, causing them to flow up or down the valley over the extensive plains, and the surface of the waters, where they can pursue their course freely, without obstruction. These winds bring down during the winter from high northern regions, and from other climes, a degree of cold the most destructive, and the climate of Canada let loose escapes, finding a free passage through these main channels.

The copious exhalations from these three great rivers by day, descending by night on the hills, roll down by their superior gravity, descending and resting on all the low plains and valleys, causing also the destructive frosts of summer.

This may serve to account for the excessive cold, which is experienced throughout the whole valley of the Connecticut River. At Windsor, Vt. the thermometer has, during the present winter, fallen as low as 30° below zero. And at Northampton, two years since, it was observed as low as 33° below zero.

Thus at Lancaster in this State, on the low plain, on the river Nashua, the thermometer was observed by Mr Breck, to descend, two years ago, as low as 35° below zero. This unusual and excessive cold produced a destruction alike extraordinary. Lancaster is situated on a very large and beautiful plain, hemmed in on two sides by hills, with an extensive opening to the North. Yet, on the neighboring hills of Mr Wilder, in Bolton, and but two miles distant, the thermometer indicated a climate of a far milder character during winter.

Franconia, in New Hampshire, is not very remote from the Connecticut, but on another river. This place is subject, during winter, to a degree of cold the most excessive, from its peculiar position and exposedness to the cold winds of the North, which here concentrate their forces between the gorges of the neighboring hills. During the present winter, the thermometer has fallen as low as 38° below zero at this place, but this is not very uncommon there. In some other winters, it has been observed to descend as low as 40° below zero.

Our climate is modified materially by its proximity to the ocean, and from various other causes.

The climate of a country, and especially on extensive plains, may be much ameliorated during winter as well as summer by plantations of forest trees, particularly by those of the evergreen class. And I find that most foreign writers have explicitly enjoined, that all gardens should be screened from cold winds on the exposed sides, either by hills or by ranges of forest trees compactly arranged, but not so close, but that every tree may preserve its branches entire, from its summit to its base.

I would wish to call the attention of our landholders to the cultivation of forest trees, either for the purposes of timber or of fuel. I have often been struck with the appearance of desolation, which is exhibited in the aspect of our hills, whose bald summits form a prominent feature in the landscape, in all the older settlements of our land. The forests covering the summits of these hills, like the human hair which crowns the summit of the head, would constitute the greatest ornament of the country. Shorn of these, they are despoiled of their beauty. Travelling among the islands of our coast last summer, and particularly over the Island of Nantucket I was forcibly struck with the desolate appearance of the whole Island. For the most part, not a forest or shade tree was any where to be seen, even for the protection of the numerous herds of sheep, which there roam at large, exposed without even the shelter of a tree, to the scorching sun of summer and the cold blasts and storms of winter, here they roam in winter and summer without protection, devouring every shrub and tree that will serve as food. This island, was formerly covered with forests of the most luxuriant growth, an evidence that the soil is by nature fertile. These forests were once the protection of the soil, drawing as they did, their nourishment in part from the atmosphere, so far from impoverishing, they always improve the soil which they retain, and by the protection they afford from the frost of winter, which sometimes destroys the herbage, leaving the naked soil exposed in summer to the scorching sun, and to be blown into the sea, by the winds, as is actually the case there.

The price of fuel and of timber is fast advancing annually; and as soon as these new forests can be reared, a profitable and advanced sale would be found. The annual consumption of our innumerable steamboats on our great rivers alone is prodigious, particularly of the most combustible kinds of fuel. In passing from New York to Providence, on board one of the boats, I found they consumed twentyfive cords of pitch Pine, during the passage of about eighteen hours, between these two cities, at the rate of four

thousand cords in one hundred and sixty trips, or in a year. And the number of boats on all our great rivers and lakes which now amount to some hundreds, will soon be augmented to a thousand, and will consume some millions of cords of wood in a year.

Forest trees may be raised by sowing the thoroughly ripened seeds, as soon as they are gathered from the tree; the smaller seeds but an inch deep or less, the larger seeds from two to three inches in depth. When a year old, transplant them into nursery rows pretty close, shortening the tap root, that they may throw out lateral roots and chiefly that they may suffer less by removal at the final transplanting. Never prune off a single limb till the trees are four or five feet high, but only shorten occasionally until the last or final transplanting, which may be done early, while the trees are rather small.

In old countries, we are informed, that their waste lands, and hills, even the most barren, rocky and inaccessible, are covered with forest trees, holes of suitable dimensions being dug through the sod.

Their modes and systems of planting, are various. In some places, oaks are first set at an extended distance: between these, other kinds are planted, as the Ash and the Larch and all valuable timber trees, for other uses; and the intermediate distances with another class; and between all, Ashes, or other trees, suitable for hoop poles, are set very thick, that the whole ground may be well covered: all these serve as a shelter by the mutual protection they afford. soon as the last named are of sufficient size, they are cut out for hoop poles, and thus the first thinning is effected. After another and suitable period, another class are cut out, and thus the second thinning is accomplished; and so on, until finally the oaks alone are left, to take complete possession of the soil. The last, when fully grown, serve for the construction of their ships, bridges, carriages for cannon, and the use of their armies, and for agricultural purposes, and for all other uses where great strength and durability are required; even for the doors, wainscoting, or floors of their public edifices and private dwellings.

The system adopted in some countries, where fuel alone is the object, is to cut over the whole ground complete every twenty years, then another growth of timber will start up anew: — and the growth

of wood and the increase, will still continue about the same, while the capital which has been expended, is again recovered, and may again be applied to new uses and purposes.

In Britain, timber as well as fuel commands a very high price, compared with the price in our own country. The Scotch Larch and the Scotch Fir are trees eminently celebrated for the valuable timber which they afford, and also for their rapid growth; they even flourish when planted on the poorest ground. And the celebrated politician, Lord Erskine, who is reputed also to be eminently skilled in all that relates to plantations of forest and of timber trees, has asserted, from his own experience, that in that country, four hundred acres of land set out during twenty years, with the Scotch Larch and Scotch Fir, will produce annually an income of ten thousand pounds sterling, or about fortyfour thousand dollars a year. His plan was to begin by planting twenty acres the first year, and thus to continue planting twenty acres every year, until finally, in twenty years, the whole four hundred acres will be completely covered. And now the first twenty acres which were planted are to be cut down and immediately replanted, and thus the same system is to be continued perpetually.

It must be confessed, that nothing like this great amount could be expected, or even hoped for, for a long time in our own country; yet ultimately we must adopt these systems,—as our forests are rapidly diminishing, others must be planted ere long to supply the demand for timber and for fuel. The subject of timber trees, I may reserve for another and future communication.

The forests which cover the plains and the summits of the hills, are the natural protection and cause of innumerable springs which arise on their summits, or on their sides, as these springs are found to diminish or totally to disappear on the destruction of the forests. In regard to our forests, as also in regard to our soil, the same system with us, has but too generally been pursued, as has been practised in all other new countries, from the first settlement of our country, down almost to the present day, namely, to take all and to give none. To exhaust the soil continually, and to restore nothing in return, is the general mode which is at first adopted in all new countries.

To this cause, not less than to the late untoward season, and to the insufficient encouragement which is afforded to agriculture, may be ascribed the extraordinary spectacle and position which we now exhibit to the world, of a nation wonderful for its energy, enterprise and industry, possessing the finest climate on earth, compelled at this day to resort to foreign countries for some portions even of the necessaries of subsistence. This state of things has been brought about in a great measure, by certain of our most barbarous laws, which are still cherished, having a most pernicious and unequal bearing on the prosperity of the husbandman.

Nonantum Hill, Newton, Feb. 1, 1837.

# ART. III. — Knowledge of Plants applied to Farming and Gardening.

The chief advantage of a scientific knowledge of plants is, that it teaches the general laws of vegetable economy, and we are enabled to apply this knowledge to a great variety of cases which occur in practice. Instead of being under the necessity of ascertaining by experiment, a great number of facts, we determine a general principle by experiment, and this general principle serves as a foundation, from which we may at once judge of the truth or error of anything which may be directly referred to it. We hope it may be interesting to the younger class of our readers at least, to take a very brief view of the science of Botany, and the manner in which botanical knowledge is applied in practice.

Botany is that part of natural history which treats of plants. The term plant, in its most proper sense, applies to everything in the vegetable kingdom, from the smallest herb which we tread upon, to the largest forest tree. It includes everything from the minutest moss upon the rocks, to the gigantic pines upon our western coast, of sixteen feet diameter and two hundred and thirty feet in height.\*

\*The Pinus Douglassii upon the banks of the Columbia river, forms extensive forests and grows to the height of two hundred and thirty feet, and is upwards of fifty feet in circumference at the base. The Pinus Lambertiana grows in Northern California, but does not form dense forests. One tree which had blown down, measured 215 feet in length, 57 feet in circumference at 3 feet above the root, and 17 feet 5 inches at 134 feet above the root. Some of the standing trees were evidently taller.

The number of different plants which botanists have already named and described, amounts to nearly sixty thousand; hence, without scientific arrangement, such a vast multitude would be but an inextricable mass of confusion. Plants are accordingly divided into classes, classes into orders, orders into genera, and genera into species; those being placed in the same divisions or groups which have some common, fixed and leading characters or resemblances. Without this arrangement, if an unknown plant should occur to us of which we should wish to determine the name, it would be as impossible to determine such name by description, as it would be to find a word in a dictionary without arrangement. We would have to turn over many thousands before we might chance to find the right one. But by means of arrangement we turn directly to the description, in the same way that we turn directly to the definition of a word in a dictionary by means of the alphabetical order of its arrangement. In determining the name of a plant, we first find the class to which it belongs, then the order of this class, then the genus of this order, and lastly the species of this genus. All plants belonging to the same species, are considered to have originally sprung from the same seed. Consequently if there are different varieties belonging to a species, they must have been produced by changes in successive generations of that species. But the seed of one species can never so change as to produce plants belonging to a different species. For instance, the pear and the apple belong to the same genus, but to different species; consequently seeds of the pear can never so change into varieties as to produce apple trees; nor can seeds of the apple ever produce pear trees. There are many different sorts of apples, which are all varieties produced by a change in the original seed of the species, but no change of this kind in any species can ever produce a different species. Hence, if a farmer should hear the opinion advanced, that one plant may deteriorate or in any way be transmuted into another plant, he should ascertain whether the two named plants belong to the same species or not; if they do not, he may be confident that such transmutation can never take place. If they are found to belong to different genera, the certainty of no such change becomes if possible still greater.

The botanical or scientific name of a plant, is the name of the genus and the name of the species to which it belongs, joined to-

gether; thus, the name of the genus to which the apple belongs, is Pyrus; and the name of the species is malus; consequently the botanic name of the apple is Pyrus malus. The pear also belongs to the genus Pyrus, and the name of the species is communis; therefore the botanic name of the pear is Pyrus communis. terms apple and pear, are the English or common names. is a great advantage in being able to ascertain the botanic names of plants, as well as in making use of them instead of English names (except in the most common of all plants as the apple, pear, currant, &c.) Many plants which are very useful, either for medicine, food, or other purposes, are known in different parts of the country by very different English names; and often the same name is applied to very different plants; thus a name which in one place might be applied to a valuable and useful plant, might in another place be applied to one which possesses no useful properties, or even to one extremely poisonous. Hence the use of English names only, is sometimes attended with dangerous consequences. But in all countries botanists make use of the same botanic names, and such difficulties are thus prevented.

Plants are supplied with nourishment in two ways. The first is what they absorb at the roots through the spongioles, which contain a great number of exceedingly small pores. The nourishment which the plant receives in this way is water, with the different substances which are dissolved in it, such as the soluble parts of manures. As soon as it is absorbed, it passes to the trunk or stem, and ascends in it through the sap vessels, which are very fine tubes running lengthwise through it, as well as through all the branches, the stems, and small veins of the leaves. These vessels or pores may be seen easily with a good microscope, by shaving off a thin' cross slice from the stem of a plant or from a piece of wood. While this liquid is thus ascending, it is called sap. It passes into the branches, and thence into the leaves, which being flat and thin, expose it to the light and air, and it then undergoes a complete change; the greatest part of the water of the sap passes off into the air in the form of vapor, through very small pores in the surface of the leaf; at the same time, a part of the air taken into the leaf, and unites with the remaining sap, so as greatly to change the nature and quality, and it is now no longer sap, but is called the proper juice; and this is the second way in which nourishment is supplied. It now begins to flow down the branches and stem of the plant through another set of tubes or vessels, and is gradually converted into the solid parts of the plant. Thus we see that a part of the nourishment is taken in at the roots, and a part at the leaves; but all the nourishment which every plant receives, must pass through the leaves, before it can be changed into wood. Hence we see that the leaves of plants are quite as important to them as their The knowledge of this principle has a vast number of applications in practice, some of which are of great importance. It teaches us that mutilating plants by stripping them of their leaves while in a growing state, is always an injury to them; hence the stripping of the leaves of corn for fodder, which is in some places practised, should never be resorted to, nor should the practice of topping corn be pursued for the same reason; hence also the practice of cutting off the leaves of mangel wurtzel for feeding cattle, before the roots have attained, or nearly attained, their full size, should not be adopted. But in some cases the leaves are the chief crop, as in the mulberry for silk; in such case it is necessary to avoid stripping them too closely or frequently, in order that the growth may not be too often nor too suddenly checked. The knowledge of this principle also teaches us an easy way to destroy hardy and pernicious weeds. It has been commonly supposed that in order to destroy them, the roots must be destroyed; but this is not at all necessary; if we only destroy the leaves by burying them or cutting off the stems, it is plain their growth is stopped, and if this is continued the roots die. Many years ago, when it was found that the roots of the Canada thistle sometimes penetrate several feet into the earth, many despaired of ever being able to extirpate them; but if they had been acquainted with this principle, they would have known that the roots might have been easily killed by cutting off the supply of nourishment from above, which has since been very successfully done in a multitude of instances.

It is the *proper juice* (above referred to) which generally gives to plants all their useful properties in medicine, dyeing, &c., hence it is necessary in extracting these substances to know in what part of the plant the proper juice is to be found.

The course of the small tubes or pores through which the sap and juices flow, may be seen in some plants by cutting off their branches with a very sharp knife and plunging the cut ends into colored water. Thus, if a branch cut from the poke be placed in a dye made from the Brazil wood, and put in a warm place, in a few hours the dye will be found to have run up the stem into the leaves, flowers, and even the fruit. The part of the stem which will be thus colored will show the place of the sap vessels. If now the upper end of a branch be cut, and plunged into the colored water, we shall be able in the same way to trace the course of the pores through which the proper juice descends. Some of these pores, however, cannot be discovered in this way, as they will not take in any colored liquor.

All the nourishment which a plant receives, is either by means of the water which is absorbed at the roots, or from the air which is absorbed into the leaves; all the wood in the largest and heaviest trees is formed in this way. The manner in which water and air is thus changed into solid wood, is indeed curious, but is readily comprehended by those who are familiar with the extraordinary changes shown by chemistry. The fact was very strikingly proved by a philosopher in Holland, who planted a willow weighing fifty pounds in a quantity of earth which he also weighed and covered with sheet lead. He watered it for five years with pure distilled water; at the end of which time the tree weighed one hundred and sixtynine-pounds and three ounces, and the earth had lost only three ounces.

The quantity of water which passes off into vapor from plants through the leaves, is often very great. Dr Hales found by very accurate experiments, that a sun-flower which weighed only three pounds, threw off in twentyfour hours, twentytwo ounces of water, or nearly half its own weight. In the same space of time, the Cornelian cherry (Cornus mascula) is said to throw off twice its own weight of water. On a warm summer's day, at a time when there had been no rain for several weeks, Dr Watson placed a bunch of grass under a bell-glass, and in two minutes the inside of the glass was covered with drops of water like dew which ran down its sides. By weighing the water, he ascertained the exact amount; and from this experiment he was led to conclude that in one day an acre of grass throws off nearly two thousand gallons of water. Some plants when cut wither much sooner than others, owing to the property they have of throwing off the water from the leaves with greater

rapidity. Hence by trying this simple experiment, we may find at once how much watering different cultivated plants require. Hence too, the reason why plants may be removed and transplanted with greater success in damp weather when the leaves give off but little water, than in dry weather when they throw it off rapidly. Hence, too, the reason why, in transplanting trees, if the roots are mutilated or diminished, it is also necessary to reduce in proportion the branches, in order to prevent the leaves throwing off moisture faster than the roots can supply it. Hence also, the reason why mown grass is changed into hay in a few hours in dry weather, while in damp weather no efforts of the farmer will enable him to succeed. The great quantity of water given off by plants, will teach us to avoid the blunder which some people make, of leaving weeds to grow round plants for the purpose of shading them and prevent the ground drying, when in fact they carry off a much greater quantity of water than would dry off the bare earth, besides diminishing the fertility of the soil. Some plants, however, give off but little water, as some kinds of moss, and may therefore in some cases be properly employed in shading the ground.

Thus, by the study of this science, farmers and gardeners may find the reason for the different operations they perform; and may very often know, or be greatly assisted in determining, what is necessary and what is not necessary for their success. At the same time they will be enabled to guard against mistakes, by which great injury is often done when least intended.—Genesee Farmer.

ART. IV. - On the Camellia Japonica. By S. WALKER.

"What nature alas! has denied,

Art has in a measure supplied, And Winter is deck'd with a smile."

PERMIT me, if you please, Mr-Editor, through the pages of your periodical, to present my best thanks to Col. Marshall P. Wilder, of Dorchester, for his polite invitation to visit his greenhouse; and to offer to your readers a few remarks on his Camellias.

Col. Wilder has probably the greatest variety, and some of the

finest and largest specimens of the Camellia Japonica, of any person in this country; his importations of this magnificent plant, have been very extensive, consisting of nearly all the last varieties raised in England, France and Germany. I noticed some, of recent importations, from twelve to fifteen feet in height; these plants will, when they shall have fully recovered from the injury of transportation from Europe, show to great advantage, towering aloft among others, no less beautiful, but of smaller growth. Green states that the Camellia Japonica is a vast and lofty tree, in high esteem with the Japanese, for the elegance of its large flowers, which exhibit a great variety of colors, and for its evergreen leaves; and that it is common everywhere in their groves and gardens, flowering from October to April. It is a native also of China, and occurs very frequently in Chinese paintings. Had the Camellia, (says the Editor of Flora Domestica) been a Greek, Italian or English plant, there would have been a great deal said of it by poets and lovers; and doubtless it makes a figure in the poetry of Japan. But unfortunately for our quotations, though perhaps fortunate for their own comfort, the Japanese have had most of their good things to themselves. But to return to Hawthorn Grove and to what I saw. ter taking off my Lady's pelisse and tippet (for she was also invited by the gallant Colonel, who does nothing by halves, as his flowers testify) and also taking off my own cloak, and thus prepared to make my debut into the presence of Flora, I was conducted into the greenhouse by the proprietor; at the first view I exclaimed -

"'Tis a bower of Arcadian sweets,
Where Flora is still in her prime,
A fortress, to which she retreats
From the cruel assaults of the clime.
While Earth wears a mantle of snow,
These flowers are as fresh and as gay
As the fairest and sweetest, that blow
On the beautiful bosom of May."

On our right hand and on our left hand, along the entire length of the conservatory, were placed specimens of this choice flower: we had scarcely commenced our examination, before we were agreeably interrupted by other visitors, friends of the proprietors and of ourselves, and with this addition to our company, we recommenced our examination, and with increased satisfaction, at least it was so to myself, and I think I may say so for all the company, as I know of

nothing selfish in the whole economy of the goddess of flowers; she appears to increase her favors in proportion to the number of admirers, giving to all individually and collectively, a portion equal to their greatest love or desire; for this reason I love to attend her courts on a gala-day, and to be surrounded by her courtiers and lovers. But it is otherwise when I wish to look into her mysteries; then the small still voice whispers into my ears, and says, be still admire - wonder - look up and know that I am God. Mr Wilder gave us the names of his extensive collection of plants, and in some cases the pedigree of some of the varieties; three fine sorts then in bloom, I understood Mr Wilder to say, were produced from seed out of one capsule. I noticed among other beauties, Punctata, Rossii, Imbricata, Chandlerii, Eclipse, Lady Hume, Fimbriata, and two splendid plants of the old double white, one of which had upwards of sixty blossoms on it at that time; this last variety is so great a favorite with me, that I cannot close this passing notice, without adding a few words in praise of this bridal flower. It is as Burns expresses it, "loveliness beyond compare." If I could be the owner of only one plant of the Camellia, I should say, let that one be the old double white. Eximia and Reticulata, which I have heretofore seen in great perfection at Col. Wilder's, stand next in my estimation, as fine varieties of this splendid shrub.

Roxbury, Jan. 25, 1837.

### ART. V. — Directions for Preserving Plants. By a LADY.

It is unnecessary to enumerate all the advantages resulting from the possession of a collection of preserved plants, as they can be fully appreciated only by a person who has made considerable progress in the study of Botany. But the beginner requires to be informed, that nothing can more materially aid him in his endeavors to become familiar with the objects which vegetation presents to his view, than such a collection, to which he can at all times refer, either for refreshing his memory, or for instituting a more minute examination than he had previously made. Plants are generally preserved by drying, and a collection of this kind is called a *Hortus siccus* or *Herbarium*. Various methods are in use for drying plants,

but the following, being among the most simple and efficacious, and attended with little difficulty, is here preferred.

The articles necessary for the accomplishment of the object in view, are, a quantity of smooth, soft paper, of large size (sixteen quires, perhaps;) eight boards of the same size, about an inch thick, of hard wood; four iron weights, or pieces of lead, two of them about forty pounds weight, the others half that number, or in place of these weights a number of clean bricks may be used, or in short any heavy bodies of convenient form. Along with these articles, a botanical box is necessary. This box is made of tin, and varies in size, from nine inches to two feet in length, according to the taste and avidity of the collector.

In gathering plants for this purpose, such as are smaller than the size of the paper are to be taken up, roots and all. In many cases, portions only of plants can be preserved, on account of their size, and then the most essential parts are to be selected, including always the flowers. Plants to be preserved, are to be gathered in dry weather, and immediately deposited in a tin box, which prevents their becoming shrivelled by evaporation, if gathered in wet weather, they must be laid out for some time on a table or elsewhere, to undergo a partial drying. When roots have been taken up along with the stems, they ought to be first washed, and then exposed for some time to the air.

Let us now suppose that a dozen specimens are procured. Over one of the boards, lay two or three sheets of the paper, on the uppermost of which spread out the plant to be dried, unfolding its various parts, not, however, so as to injure its natural appearance.

A few of the leaves and flowers ought to be laid out with particular care. Over this specimen, lay half a dozen sheets of paper, on the uppermost of which lay another plant as before, and so on successively, until the whole are disposed of. A few sheets are then laid upon the last, and a board placed over all. Plants, viewed with reference to drying, may be divided into two classes, the one comprehending those which being thin, soft, and flexible, require little pressure to reduce them to a level, the other including such, as being stiff and thick require much pressure.

Supposing the above plants to have been of the first class, we lay upon the upper board one of the smaller weights. A series of more stubborn specimens being in like manner, placed between other two boards, we lay one of the larger weights upon them.

Should more specimens be collected next day, they are disposed of in the same manner: and thus successively. At the end of three days generally, the plants first laid in are to be taken out, together with the paper about them. They are to be laid in fresh paper, three or four sheets being placed between every two plants, and the whole put between two boards, with a weight over them. The second series is similarly treated next day, and so on. The paper from which the plants have been removed, is to be dried for future use.

There will thus be four sets of plants; two in the first stage of drying, and two in the second stage. The plants of the second stage sets should be taken out about three days after they have been deposited, and after dry paper has been put about them, returned to their places. The paper may thus be shifted until the plants be perfectly dry, when they are finally removed. Each plant is then placed in a sheet of dry paper, and along with it is deposited a slip of paper, on which are written the name of the plant, the place in which it was gathered, the time of gathering, the soil, and such other circumstances as may tend to elucidate the history of the species. Thus prepared, the plants are packed up in bundles which gradually enlarge their dimensions, or increase in number till the end of the season.

Having in this manner arranged a certain number of plants, the collector has now to arrange them. For this purpose, he has to procure a quantity of good, stout writing or printing paper of large size, folded into folio, which is to be stitched in colored covers, making fasciculi of five or six sheets each. A quantity of fine large pot or other writing paper, in half sheets, folio size, cut round the edges, is also to be at hand. Let a number of narrow slips of different length, be cut from a piece of the same paper, and let some prepared isinglass or dissolved gum be in readiness, together with a camel hair pencil. Take a dried plant, lay it upon a leaf of the fine cut paper, then fasten it down by means of a few of the slips, to which isinglass or gum has been applied, laid across the stem and some of the branches. Two or three plants are generally sufficient for a plant or specimen. In this manner all the dried plants, destined to form part of the herbarium, are treated.

Write the name of each species on the top of the leaf, and transcribe the notice respecting the place in which it was gathered, &c.

at the bottom. Then arrange the plant according to system, and lay between every two pages of the fasciculi. The fasciculi are formed into bundles, by being laid alternately up and down upon each other, as they do not lie conveniently when the heads of the plants are all at the top of the bundle, because the stalks and roots are thicker than the flowers. These bundles, consisting each of ten fasciculi, may be covered by pieces of paste-board tied by strings. The collection is kept on the shelves of a cabinet, or in a chest. To prevent the attack of insects, it is necessary to keep beside it a piece of sponge soaked full of rectified oil of turpentine: and to ensure it against decay from damp, it ought to be kept in a dry and well ventilated place.

The above, is an orderly method of forming a herbarium; but many other expedients are resorted to. Most plants dry sufficiently between the leaves of old books, and many collectors save themselves the trouble of forming a neat collection, by huddling up their specimens in the least expensive or laborious manner.

Another method of putting up dried plants, is the following:— The specimens are fastened to leaves of stout paper in uniform size: the species are then arranged in order, and all those of the same genus are placed within one or more sheets of paper, on the outside of which the generic name is written. The generic fasciculi are then collected into bundles, on which are written the names of the classes and orders. Some persons keep their specimens loose, within sheets of paper. This method is the most convenient for the minute examination of the plants, but has disadvantages which render it inexpedient in ordinary cases.—Floricultural Cabinet.

Remarks on the above, from the same work. By Primula Scotica.

I have read "A Lady's" directions for preserving dried plants, and have one or two suggestions to offer, by way of improvement, should you think them worthy of insertion. I always use blotting paper to dry the plants in, as it absorbs best; if they are very succulent, I prefer the thick white kind. Instead of wooden boards, I make use of millboards, as less clumsy, (one sheet cut in two,) and two dozen of them will enable the drier to have a great number of plants under the press at once. Nearly all plants require only two or three sheets if they are laid in the innermost; a millboard slide placed between every two or three plants; and at the end of three

days, if the papers are damp, the plants should be carefully taken out, and put in the same number of dry smooth sheets. If necessary, the papers should be changed in two or three days after this, but most plants will be thoroughly dried in six days, some sooner. My weights are leaden, with handles, one hundred and twenty pounds. and two hundred and ten pounds each, and the weights answer better than heavier ones. The plants should be dried, and kept in a dry airy room, where there is no fire. A plant should never be taken from under the weight till it is quite stiff. I keep my duplicates in half sheets of blotting paper, laying those of the same species between two loose sheets, and tying up a number of these leaves and plants between two half sheets of millboard. My herbarium is a large half bound book, composed of cartridge paper of the largest size, and between each leaf I have a slip of cartridge paper bound in, the length of the page, so that when the book is full, the edges close evenly. Each page is cut with four slips, so as to admit a leaf of the largest folio writing paper, leaving a good margin of cartridge paper. On each leaf of writing paper, I fasten a plant with thin hot glue, touching one or two leaves and flowers, on the back of the stalk. One or two leaves should have the under side uppermost, also one or two flowers, so as to display the plant naturally. If the plants are small, two varieties, or two species even, may be placed very well on one page. At the foot of the plant, should be written the Latin and English generic and specific names, a reference to some Botanical work, as Hooker's British Flora, the date and place of gathering. This plan, which enables me, as my collection increases, and the genera are filled up, to move the plant on its half sheet to any part of the book, was recommended to me by an eminent Botanist, and I have found it very preferable to those generally employed. Neither paste nor gum will answer so well as glue, if it is used while hot.

ART. VI.—List of New and Rare Plants, noticed since our last. From Foreign Works.

<sup>1.</sup> Yucca Flaccida — Weak leaved Adam's Needle. This species is probably a native of North America. It is cultivated in the Garden of the London Horticultural Society. This species

does not appear to produce a stem as the others do. The flower stalks rise some feet high, each producing a panicle, having numerous flowers of a greenish yellow color, the tips of the petals having a small spot of red at the lower side.—Bot. Reg.

- 2. Centaurea Balsamita Costmary-leaved. Compositæ. Syngenesia, Polygamia Æqualis. Syonym, Carduus orientalis. Seeds of this plant were sent from the Imperial Botanic Garden, at St Petersburg, to this country. It is a native of America, and has been recently introduced. The plant is a hardy perennial. Stems, rising about two feet high, each terminated by a moderate sized flower, of a sulphur color. It is cultivated in the Chelsea Botanic Garden.—Brit. Flow. Gard.
- 3. Cratægus Aronia The Aronia Thorn. Synonym, Mespilus orientalis. This species is a native of the Levant, and is one of the largest and most like timber of any of the thorns. The plant is a very free grower, and grows to a very neat form. The fruit is as large as a fine sized cherry, of an apricot yellow color, and, being produced in such abundance, causes the tree to be very ornamental and a most suitable one for the lawn, or other part of the pleasure ground. Cratægus from Kratos, strength: alluding to the wood. —Bot. Reg.
- 4. Cytisus Æolius Æolian Cytisus. Diadelphia Decandria. The plant is a native of Stromboli, where it was discovered by Professor Gassone. Seeds of it were sent from Naples, to the Hon. W. F. Strangways, in whose garden, at Abbotsbury, in Dorsetshire, it bloomed this year. It is an erect growing shrub, the branches terminated with racemes of yellow flowers. It is supposed that the flowers will be handsomer when the shrub is older, and that they will be produced more abundantly.—Bot. Reg.
- 5. EPIDENDRUM ŒMULUM Emulus Epidendrum. Orchidaceæ: Gynandria Monandria. This pretty neat flowering species has flowered in the collection of Richard Harrison, Esq.; to that gentleman it was sent by Mr Haketh. It is a native of Para. The plant very much resembles Epidendrum fragrans. The flower stalk is about three inches long, producing three or four flowers upon each. The pseudo bulbs of E. Æmulum are perfectly oval, and not tapered to each end as in E. fragrans.—Bot. Reg.
- 6. ESCALLONIA ILLINITA Varnished Escallonia. Escalloniaceæ. Pentandria Monogynia. A very pretty evergreen species, much

more hardy than any other of the genus. The leaves are broad, of a pale green color, varnished, producing a very pretty appearance. The plant forms a very neat bush. The branches are terminated by racemes of many flowers, which are white, tinged with green at the under side. It blooms from the end of July to October. The plant emits a very powerful scent, rather disagreeable. It is a native of Chili, growing in the mountainous part of that country. Escollonia Montevidensis is quite hardy with us at Wortley, grows very vigorously, and blooms profusely; the flowers being white. Escallonia rubra is equally hardy, thrives and blooms most admirably. All the species are highly deserving a situation in every shrubbery. They are handsome plants even without flowers, but very attracting, when in full bloom, more particularly so, when the bush has got to a tolerable size. We find the plant to flourish well in a mixture of loam and peat.—Bot. Reg.

- 7. Euphorbia Bojeri Mr Bojer's Spurge. Euphorbiaceæ. Monæcia Monandria. Professor Bojer sent this species from Madagascar. It is a very pretty stove plant, and merits the title of splendens, much beyond the one so called. It has bloomed in the stove in the Glasgow Botanic Garden at the end of the winter, more or less at most seasons of the year. Each involucre has four scarlet bracteæ, half an inch across, which produce a pretty appearance. The species is not so full of spines as E. splendens, more coriaceous, more oval and retuse leaves, the bracteæs are of a much higher color.—Bot. Mag.
- 8. Fuchsia Macrostema: var. Recurvata Large-stamened Fuchsia. Recurved flowering variety. Onagaria: Octandria Monogynia. This very pretty flowering variety was raised from seed by Mr Nevin, at the Grasnevin Botanic Garden, Dublin. The plant is of a most vigorous habit. The fine red calyx, has its five divisions much recovered, exposing the pretty blue petals to full view. The flower and stem are near six inches long. Like every other of this graceful, pretty flowering genus, the present deserves a place in every collection of Fuchsias.—Bot. Mag.
- 9. LAPEYROUSEA ANCEPS.— Two-edged stem. Synonyms, Gladiolus anceps, G. denticulatus: Ixia Lapeyrousa. I. pyramidalis: Iridaceæ, Triandria Monogynia. The plant is a native of the Cape of Good Hope. It requires to be cultivated in the greenhouse or pit frame. The stem rises about six inches high, each producing

from six to eighteen flowers. The flower is about three quarters of an inch across, white, and fragrant, emitting a very agreeable perfume. It blooms from June to August. Lapeyrousea, so named, in compliment to M. Picot de la Peyrouse, author of the "Pyrenian Flora."—Bot. Reg.

- 10. Monarda Aristata Awned. Synonym M. citriodora: Labiatæ, Diandria Monogynia. This species is a native of Arkansas Territory, as also about San Felipe, in Mexico. It has recently been sent to this country by Mr Drummond. The plant is quite hardy, and blooms from July to September. It has been stated to be a perennial, and on some occasions, annual. The stem rises to be about a foot high, producing whorls of pale rose-colored flowers. Bot. Mag.
- 11. MYANTHUS DELTOIDEUS Triangular-lipped Flywort. Orchidaceæ: Gynandria Monandria. This very singular flowering Orchideous plant, is a native of Demarara, found upon trees near the great waterfall of the Demarara river. It is cultivated in the collection of Richard Harrison, Esq. Aughburg, near Liverpool. flowers of this species are very distinct from any other, the lip is destitute of the fringe of hairs, which M. cristatus, and M. barbatus have. The flower stem is near a foot long, bearing about half a score of blossoms - each near two inches across: the lip is of a rich purple color: the other parts of the flower, green, spotted with dark purple, and have a very pretty appearance. Dr Lindley has observed, "that when a third part of the genera and species of Orchideous plants was published in 1834, he was only acquainted with Myanthus cernuus, and cristatus"—the latter, the learned Professor considered a Catasteum, and the former, as the only genuine species of the genus; thus, in some degree, mistaking the real generic character of Myanthus, in consequence of the imperfect materials of which he was then in possession. But now that four species are known in a living state, it has become necessary to alter the original character of the genus, so that it may include Catasteum cristatum. This, Dr Lindley thinks is more advisable than to unite Myanthus with Catasteum, as recommended by Sir William Hooker. If the latter measure were to be adopted, it would be equally necessary to suppress the genera Monachanthus, Mormodes, Cynochus, &c., the effect of which would be to form a heterogenous collection of species, the principal combining character of which, would

reside in the peculiar succulent stems. As they now stand, each has a clear distinction, and each possesses as many species as are usually assembled under newly discovered types of structure. Myanthus, has already four; Cynoches, two; Monachanthus, two; Catasteum, five; and Mormodes one species.—Bot. Reg.

- 12. Pentstemon Heterophyllum Various leaved. Scrophulariaceæ: Didynamia Angiosperma. The late Mr Douglass discovered this plant in California, from whence he sent the seeds to the London Horticultural Society. It is a hardy herbaceous species, blooming from June to October. The flower stems rise to about two feet high, and bear a profusion of flowers of a purplish-red color, of a very handsome appearance. Each flower is near an inch and a half long. It is a very desirable species, and merits a situation in every flower garden. Pentstemon, from pente, five, stemon, stamen.—Bot. Reg.
- 13. Aspasia variegata Variegated flowered. Natural order, Orchidaceæ: Gynandria Monandria. This very neat and pretty flowering species has bloomed for the first season in this country, in the collections of R. Bateman, Esq. and of Mr Knight, King's Road, Chelsea, during the present year. It is an inhabitant of the tropical part of South America, in its native state. The plant is of easy culture. The petals are yellow at the edges, and green up the middle, streaked and spotted with red: the labellum is white, spotted and streaked with violet. Each flower is upward of two inches across: the flowers are delightfully fragrant in the morning. The plant merits a place in every collection of Orchideous plants: being of easy culture, it is probable it may soon be procured at a low cost. Aspasia, from aspasomia, I embrace; alluding to the column embracing the labellum.—Bot. Reg.
- 14. AMARYLLIS PSITTACINA, HYBRIDA Hybrid variety of the Parrot Amaryllis. This splendid variety was raised in the hot house of William Griffith, Esq. South Lambeth, London; it is a hybrid between A. Johnsonia and Psittacina. It has bloomed in the stove at the Glasgow Botanic Garden. The flowers are very splendid, usually four flowers are produced in a scape. Each flower is near six inches across. The petals are white, with a small portion of green at the lowest part, the edges and tips have a broad portion of fine crimson, and numerous crimson stripes run up the petals; altogether it is a most beautiful flowering variety, well meriting a place in every stove.—Bot. Mag.

BEGONIA FISCHERI—Dr Fischer's. Begoniaceæ: Monœcia Polyandria. This pretty plant was sent from Berlin in 1835, to the Edinburg Botanic Garden, where it bloomed in the spring of the present year. The flowers are of little interest. The foliage is smooth when young, of a bright red, at the under side, paler at the veins, and a pretty pink above, having, too, a peculiarly silver lustre, which remains upon the old leaves, which, at that stage, are of a yellowish green on the upper side, and of a more pale red on the under side. It is a very neat plant, and well deserves a place in the stove; like the other species it is of easy culture, — Bot. Mag.

- 16. Bartonia aurea Golden-flowered. Loaseæ: Polyandria Monogynia. A very pretty flowering annual: the flower stem rising a foot high. The plant produces a profusion of showy flowers, of a fine golden yellow color. Each blossom is about two inches and a half across. The plant is a native of California, from whence it was sent by Mr Douglass to the London Horticultural Society, in whose garden it recently bloomed. It delights in a sheltered sunny situation, and it is to be grown in a rich soil, where it will bloom profusely. The plant requires to be raised as a frame annual, and to be planted in the border in May.—Brit. Flow. Gard.
- 17. CLINTONIA PULCHELLA—Pretty Clintonia. Lobeliaceæ. A native of California, from whence it was sent by Mr Douglass to the London Horticultural Society. It is a pretty flowering tender annual, of very humble growth, only rising a few inches high. The flowers are rather larger than Clintonia elegans, blue, with a broad white spot at the centre, stained with a rich yellow. The flower is about half an inch across. Its delicacy of growth, will prevent its spreading rapidly through the country.—Bot. Reg.

CYRTOPODIUM WILLMORII — Mr Willmore's. Orchidaceæ. Gynandria Monandria. The plant was discovered by Mr Henchman, in the valley of Cumancoa, in the republic of Venezuela. The species is of terrestrial habits, growing among decayed vegetables. The leaves of the plant grow more than six feet long in its native habit. The species has bloomed in the very superb collection of John Willmore, Esq. Oldford, near Birmingham, having a flower stem four feet six inches high, very much branched, producing a panicle of numerous flowers, each flower being above two inches across. The sepals and petals are of a yellowish green, spotted with dull red: the lateral petals are brighter in color, but not so

much marked as the sepals; lateral lobes of the lip of a pale red, the intermediate lobe yellow, having the edge spotted with red. A very handsome flowering species, deserving a place in every collection. Cyrtopodium, from Kurtos, convex, and pous, a foot; in reference to the convex claw of the labellum.

- 19. Craspedia Glauca. Compositæ: Syngenesia: Polygamia æqualis. Mr James Blackhouse, of the firm of Messrs Blackhouses, Nurserymen, York, went to Van Dieman's Land a few years since, and from thence he has sent the present plant to the York Nursery. It is a perennial herbaceous plant, growing upwards of a foot high. The flowers are globular shaped heads more than an inch in diameter, of a yellow color. Each of these heads is composed of yellow heads, producing a pretty effect. Craspedia, from Kraspedon, a fringe; referring to the feathery pappus.—Bot. Reg.
- 20. CRATEGUS MEXICANA Mexican Hawthorn. Another pretty species of Hawthorn, which is a native of the Tierrafria, of Mexico. It is a small growing tree, with dark shining leaves. In warm countries, it is an evergreen. The flowers are white, each corymb having a considerable number. They are succeeded by a large yellow fruit, each fruit is the size of a May Duke Cherry. Both the blossoms and fruit make a pretty appearance among the bright green foliage.—Bot. Reg.
- 21. Epidendrum Macrochilum Large-lipped. Orchideæ: Gynandria [Monandria. A very handsome flowering orchideous plant, a native of Mexico; from whence it was introduced by Chas. Horsfall, Esq. Everton, near Liverpool. In the rich collection of Mr Horsfall's Orchideæ, it bloomed during the last summer. The scape rises about a foot high, terminated by a raceme of four large handsome flowers, without scent. The flowers are, sepals and side petals, of a greenish brown color; lip, white, when old, cream colored, having a large purple spot at the base. Each flower is near three inches across. The flowers are singularly pretty. Epidendron, from Epi, upon, dendron, a tree; native habitation of the plant.—Bot. Mag.
- 22. Epimedium Macanthrum Large-flowered. Berberaceæ: Tetrandia Monogynia. A native of Japan, which has flowered in garden of the University of Ghent. The flowers are very singular in form, more than an inch across, of a pale violet color, which are very fragrant. The plant is quite hardy; it is grown in the nursery

of Mr Osborne, Fulham. Epimedium, from Media, where the plant to which it belonged, was said to grow.—Bot. Reg.

- 23. IBERIS CORONARIA Rocket Candy Tuft. Crucifera: Tetradynamia Siliculosa. This hardy annual is of considerable beauty, being very showy, and a pure white. The clusters of racemes are numerous and very large, being three or four inches long; at a distance the fine flowers very much resemble the Double White Rocket. It blooms for several months during the summer. It well deserves a place in every flower garden.—Brit. Flow. Gard.
- 24. Ionopsis Tenera Delicate flowered. Orchidaceæ: Gynandria Monandria. A native of Havanna, from whence it was brought by Capt. Sutton, in 1835, and by that gentleman presented to Sir Charles Lemon, Bart., in whose collection it has bloomed. The scape rises about eight or ten inches high, bearing a loosish panicle of delicately marked flowers, which are of a pale pinkish white, beautifully marked with violet colored veins. But little is known in this country of the plant of this genus: it is rare to find them in collections of Orchideæ, by reason of the difficulty of preserving them on their journey in the ship, and even when they are safely imported, they are difficult to cultivate, and are soon lost. They are native of the woods, and there grow upon the smaller branches of the trees, or upon dead branches, which their delicate white roots soon overspread. There appears to be four species known of this genus, viz. I. tenera, I. utricularioides, I. pallidaflora, I. paniculata. The flowers of the latter species are of a snowy whiteness. It was discovered in the ancient forests of Brazil. Ionopsis, from ion, a violet, and ophis, look, meaning violet faced. Bot. Reg.

## ART. VII. - On the Culture of Minuluses. By SALVIA.

Minulus moschatus — Musk-scented. This kind I have found to be perfectly hardy, having stood most severe frost during the winter, without the least perceptible injury; more particularly so, when grown in an elevated situation, as on rock work, or raised bed. The tops die in winter, but the roots remain good, and at the return of spring push forth shoots. The plant delights in rich soil. When

the summer season proves dry, the plant requires a free supply of water: if deprived of this, it will be weakly, and produced but few flowers. When grown in such a soil, and well attended with water, I have had the plant grow two feet high. I tried a single plant in a rich soil, punched off all the suckers as they appeared, and I had the pleasure to see a fine plant two feet high, clothed with blossoms; this was grown in a pot, placed in the flower garden.

I have several vases placed in a flower garden; a plant of Fuchsia, or other ornamental plant, is placed in each, being grown in a pot; I had a circular pot a few inches deep, made to fit the inner rim of the vase, and up to the edge of the pot containing the Fuchsia, &c.; in this, I planted the Mimulus moschatus, attended it well with water, the shoots pushed rapidly, and hanging gracefully down the side, flowered abundantly, having a pretty appearance, and perfuming the air to considerable distance. I painted the vase green in order to show the flowers to greater advantage.

I find that the plant speedily exhausts a soil that was well enriched at the first planting, and if not replanted, soon becomes weakly. I, therefore replant every year, by taking up the roots, as soon as the shoots push at spring, in entire masses, with the soil adhering and placing such upon a rich soil, fill up the interstices with similar soil; in this way the plant grows vigorously the first season.

This plant is very ornamental, when grown in pots, and kept in a greenhouse or room, a liberal supply of water being given — keeping a portion in a stand in which the pot is placed.

The plant is easily propagated, either by divisions of the roots, &c., by sowing the seed in the spring, or even by cuttings of the shoots.

Mimulus roseus. — This is a very delicate flowering species, requiring a rich, sandy loam. It is easily raised from seed, and flourishes well, either in the open ground, or cultivated in pots. The flowers are not produced so numerously as in other species or varieties I possess, but they are of a pretty rose color.

Minulus variegatus. — This is a very neat and pretty flowering species, making a showy appearance: it delights in a rich loam. A bed of it looks well. It also grows freely in pots. The plant is easily propagated, either by seed or division. It is a far prettier species, than the roseus, and deserves to be in every flower garden.

Mimulus rivularis. - A considerable number of very handsome

varieties have been raised from this species, as Youngii, Smithii, Elphinstonea, Rowsoneana, Wheelariana, Ranbyana, &c. This plant delights in a rich, moist soil, mixed with sand, and if it be a little shady it is beneficial. The colors of the flower are better, and the plant more vigorous. A free supply of water is necessary, in order to grow this successfully. I have had a single plant grow three feet and a half high, and be six feet in circumference, producing a vast profusion of flowers, most amply repaying the little extra attention paid to its culture. When I obtained this plant at first, I was instructed to grow it in a small shallow pond, keeping the roots immersed in water; I was told it would there succeed far better than by any other method, but in this particular I find it very much to the contrary. A soil as above described, and a good supply of water in dry weather, is all that is required. I had a plant of M. Elphinstonea, grown in a pot this summer, the size above particularized. The species and all its varieties are readily increased by taking off rooted shoots, or by cuttings. Seed sown in spring, and the plants pricked out into a bed of rich soil, will flower by July and continue through the season. The impregnation of these kinds, with any or all of the others, produces a pleasing and interesting variation of flowers.

M. Bifrons. — The flowers of this pretty species are large and showy. The flower stem rises about eight inches high. The fine bright yellow blossoms, with one large deep crimson spot, are very pretty, they are highly ornamented from April to November. The plant in all respects, requires a treatment as directed for M. rivularis, and all its varieties.

M. glutinosa. — This is an old inhabitant of our greenhouses, and is most deservedly so. The plant is shrubby, and of easy culture, producing abundance of buff-yellow flowers. It delights in a rich sandy soil, having the pots well drained. This kind being planted in the open borders in spring, becomes a most pleasing object through summer. It requires a warm and sheltered situation, and to be grown in a soil as above stated. Cuttings of this kind readily strike root. I have endeavored to obtain plants of this kind, being impregnated with M. rivularis, and having succeeded in getting seed, I hope next year to be gratified with satisfactory results, by having flowers of the herbaceous kinds upon a shrubby plant.

M. cardinalis. — This is the newest species I possess. I pro-

cured a plant in the summer of 1835, which bloomed and produced seed. I sowed it in January, and early in February potted the plants into a rich soil, keeping them in a Melon frame, with a moist and brisk heat. I repotted the plants every two or three weeks, up to the end of May, and when too large for the frame I placed most of them in the greenhouse, where they were kept through the summer. One plant has grown six feet high, and spread proportionably, making a fine show with its blossoms. Other plants were from four to five feet high. — A rich soil, well drained, plenty of pot room, and a free supply of water, will furnish plants of the above size.

About the middle of May, I turned out a few of the potted plants into the open border in the flower garden; one reached five feet high, the other very fine. In this situation, I gave a free supply of water. The plants in both instances were fine specimens, and very superior to any I have seen elsewhere, and had a most beautiful appearance when in bloom. The largest plant had one hundred and five flowers out at one time.

I tried one plant to stand in a pan of water, and the others to be watered in the usual way, but giving a very free supply: and by the latter mode the plants were not only healthier, but much larger. I concluded the continued water in the pot soured the soil, and thus injured the plant. I have now a number of young plants in small pots, for next year blooming. I judge a cool part of the greenhouse will be suitable to keep them in during the winter.

I find that there are two or more kinds by the name of cardinalis; the one I have, is of a fine deep scarlet red, with the segments of the limb of the corolla quite flat; the other is of an orange outside, scarlet within, and the limb of the corolla bent back; the latter is not near so handsome as the former.—Floricultural Cabinet.

## ART. VIII .- Calls at Greenhouses in Boston and Vicinity.

At the splendid establishment of J. P. Cushing, Esq. Belmont place, Watertown, in the large central apartment, we found a brilliant display of Oxalis, Roses, Primulas, Gillyflowers, Lachenalies, Pansies, Geraniums, and a variety of other showy flowers so agreeably intermingled, as to present a most enchanting appearance. The high, circular stage on the back side of the house is most tastefully

arranged, forming a complete mass of healthful foliage and flowers of various kinds.

The Orange and Lemon, with their golden fruits, Rhododendrons, Azaleas and Camellias, were prominent ornaments of this rich assemblage of plants. In this department, Epacris grandiflora and Erica mederteana, ardens and speciosa were in bloom. But one of the most shewy plants that first attracted our attention was a fine specimen of Azalea Phænecium, completely covered with bloom. Among the numerous varieties and species of the Azalea, (or Rhododendron as it is now called) we think this one of the finest. A. indica stood by its side forming a fine contrast with its pure white flowers.

The pretty species of Camellia, sangua rosa, producing small blush flowers shaded with pink, is beautiful; a plant of this was in full bloom.

As we entered the next compartment, a large plant of Solandria grandiflora, was the first object to attract our attention. The plant is remarkable on account of the large size of its flowers, which are eight or nine inches in length, shaped like a goblet. When first expanded, the flowers are white with the interior of the cup striped with delicate purple; it afterwards changes to a pale yellow. It is a very rare plant; we have never seen it in any other collection, and believe it is not to be found in this region. It was named in honor of Daniel Solander, an English botanist of much merit. It is a native of Jamaica. It belongs to Pentandria Monogynia..-Nat. Ord. Solaneæ. Another elegant plant in flower, which should be in all collections was Bletia Tankervilliæ, belonging to the Orchideous tribe: of this there were a number of fine specimens: one in particular had two vigorous spikes of flower, about three feet high; on one of them we counted nineteen flowers. The lower division of the flower is brown, the upper white. It is a native of China. Its generic name is in honor of Luis Blet, a Spanish

Bletia hyacinthina is a more delicate species with elegant purple flowers, a native of the same country as the other species; a fine plant of this was in flower. Ornithogalum latifolium, exhibited a spike of its pure white flowers. Melostoma atromelia is a beautiful plant with broad ovate five nerved hairy leaves. The flowers are of an exquisite bluish purple: it belongs to Decandria monogynia—

Melostomaceæ. One of the finest creeping plants which ornament the hothouse, we should judge is Combretum purpureum. We were shown a plant of this which had grown from a cutting in two years and a half from twenty to twentyfive feet in length: it has not been destitute of flowers for a year past. The flowers are disposed in beautiful branches, which are small but numerous, of a fine deep scarlet color. It is a native of Madagascar. Decandria Monogynia — Combreaceæ.

Plumbago capensis presented a very pretty appearance with its flexible branches trained to the wall. The flowers are disposed in umbels of a soft delicate blue.

Plumbago rosea, another pretty species, was also in bloom, with fine rose colored flowers. Lantana cammara is a curious plant, on account of its changeable flowers, which are produced in capitate umbels, changing from yellow to pink, and from that to purple; a plant of this was covered with bloom, which presented a great variety of tints. Didynamia Angiosperma — Verbenaceæ. A plant of Ardisia crenata was loaded with its fine red berries, and may be considered as a very ornamental shrub for the hothouse.

A gigantic plant of Crinum amabile was showing vigorous flower buds: from this plant was produced the magnificent specimens exhibited at the last annual exhibition of the Massachusetts Horticultural Society, by Mr Haggerston. It has bloomed once since that time. Babiana cerulea of the natural order Irideæ, and allied to Ixia, a very pretty plant with blue flowers, was in bloom.

We noticed a new and beautiful Passiflora, with fine, pinkish carmine flowers, but do not recollect the specific name. A large plant of Passiflora alata was covered with its shewy flowers. Hibiscus sinensis plena, and H. lutea plena, with a number of other varieties were in perfection. The single variety we think the most beautiful, although we suppose many would prefer the double varieties. It is said that hedges are made of this in some parts of China. From this specimen, we imagine a hedge of this plant must present a splendid appearance when in flower. Some of the Cactus tribe were in bloom; we noticed many varieties of this curious tribe. Among other pretty plants in flower, we observed Roellia formosa, Ixora rosea, Vineas, Allamanda cathartica, Gloxinias, Ecrimacarpus, with many other interesting plants. Mr Haggerston has raised a great number of seedling Amaryllis; a beautiful one resembling

vittata was in flower, and entitled to a name. A most magnificent plant of Amaryllis Johnsonia displayed its fine scarlet crimson flowers; two spikes from the same bulb, on which were thirteen flowers.

In the forcing department, the grapes were beginning to break, giving indications of a most vigorous growth. In large pots, there were some fine coiled vines in a more advanced state, showing a plentiful supply of clusters in embryo. The pine apple plants, of which there is a great number, were in a luxuriunt state; many of them will fruit the present year.

In rear of the hothouses, is a range of forcing pots ninety feet in length, in which vegetables of various sorts are grown. We saw here fine Cauliflowers, Lettuce, Cucumber vines well set with fruit, and other vegetables in different stages of growth; — Pots of strawberries on which was fruit of extra large size beginning to ripen. Here were also pots of grapes coiled according to Mearn's system, beginning to break.

AT THE GREENHOUSE OF MARSHALL P. WILDER, Esq. Hawthorn Grove, Dorchester, we found the brilliant display of Camellias mentioned in our last, continued, though somewhat diminished in splendor. There were many beautiful varieties in bloom which have opened since that time, among which are the following.

Hallesia, pink striped. Conchata, very beautiful deep pink spotted or striped. Parks, rose striped; delicate pink shaded with white, slightly fragrant. Rosa sinensis. White Warratah. Rubricaulis; red spotted. Venosa; white shaded with rose. Scintilan; very fine deep red. Gloria mundi; red, blotched with white, superior to Chandlerii. Colvilli; beautifully variegated or spotted; superior if possible to punctata. Alba semiduplex; semidouble white. Cliviana. New English speciosa; deep crimson with white blotch: this is different from the speciosa described in the last number of the Register; that was the French speciosa. Roi de pas Bas, very dark, inclining to purple. New Imported; fine deep red, Conchiffora rosea, fine. Floyii, deep rose shaded with white; the foliage of this fine variety is remarkably large. Charlemange: pink with whitish edge. Intermedia; fine deep blush. Eximia, very deep red, and one of the most perfect shaped double flowers. Kentii. English Corolina; fine deep red. Lucida; dark red with white shades, foliage very glossy. Elegans; very large and fine; deep rose color, with

variegated centre. French Corolina: when expanding, has the appearance of a cabbage rose — fine variety.

The Camellias have recently been repotted, which of course would affect the beauty of the flowers, in some degree. We were, therefore surprised to see them look so well, especially as there has been a continual display for more than two months. A very beautiful plant of Azalea Phænecia, covered with flowers in the most perfect state, showed to great advantage. A. indica and A. hybrida were also in flower. A. coccinea var. Smithii is a new and splendid variety with deep rose colored, or almost scarlet flowers, spotted with darker spots: flowers large, measuring three inches in diameter. Mr Wilder has another plant similar to this, which was received under a different name, but apparently the same.

In the stove, we found a splendid show of Amaryllis. Of this family, Mr W. informed us he had about 100 varieties. Some of the finest in bloom were A. bedonia, recurvifolia, platapetula, salubalis, ratinurva, vitilena, striataflora and Braziliensis: of all the Amaryllis, we think the variety platapetula the most perfect in shape. Ixia tricolor and Sparaxis grandiflora were displaying their interesting flowers. Some fine tree roses which had been forced, in this compartment, were opening their flower buds.

In the greenhouse we noticed among other shewy plants, a flower of the Pæony Banksiæ, which measured nine inches in diameter.

An extensive addition to this numerous collection is about being made, as the proprietor has recently received by the Switzerland, from Havre, a great assortment of rare plants: among them, one hundred and fifty varieties of hardy Azaleas; new Camellias, Rhododendrons, &c. If the Azaleas will stand our winters, they will be a very valuable acquisition to the shrubbery.

We have not seen a greenhouse with which we are more pleased, than that of Mr John Towne, No. 2, Snowhill street, Boston. This is a small house, but contains many rare and valuable plants:— among them more than forty species of Ericas, some of them qutie large, and all in a most luxuriant state of growth.

What can be more delightful, for those who have a taste for the cultivation of plants, when confined within the brick walls of the city, to have so pleasant a retreat from the cares of business, as a

small well stored greenhouse, separated from the drawing room by a glass door or window, through which is displayed the riches of Flora. What a source of innocent amusement and profitable instruction to the children of the family. Why is it that so much real enjoyment is neglected and passed over, for the anticipated and never-to-be-realized pleasure of retiring to some green spot to spend the remnant of life in floral or horticultural pursuits, when almost every one, who has the desire, may realize in some measure, even while engaged in the busy pursuits of the city, these elevating and satisfactory employments. We would recommend to those who delight in flowers, ("the smiles of our Heavenly Father," as Wilberforce styled them) who are about to erect a dwellinghouse, to add to it a small greenhouse, similar to Mr Towne's, as the expense will be but trifling; and as for fuel, an important item in the expenses of a greenhouse, here is none required, more than is necessary to heat the breakfast room under it, as it affords sufficient heat for the plants above.

The proprietor has displayed much taste in the training of many of his plants. He has about a dozen varieties of the finest Camellias, Rhododendrons, Azaleas of various sorts in bloom, a fine plant of Epacris grandiflora, covered with flowers, and most of the following were in bloom, viz. Erica pubescens, rubida and caffra, Diosma speciosa, Kennedia monophylla, Pimellia rosea, Coronilla glauca, Calothamnus quadrifolia, Sinus Brazillensis, Utuxica myrtifolia, Jasminum revoluta, Polygala attenuata, Corræa speciosa and many others. There was also a fine display of Hyacinths grown in bulb glasses. The Corræ speciosa is a beautiful and curiously constructed plant, a native of N. S. Wales, where it was discovered by Sir Jos. Banks and Dr Solander. The flowers are remarkable for the distinct lines that bound the colors, giving them an artificial appearance: they are tubular, similar to the scarlet monthly honeysuckle, of different shades of pink and scarlet, about one third of the upper section of the tube is a bluish green. It is an interesting orkament of the greenhouse for three or four months of the winter season. The genus was named in honor of the late Abbe Correa, the Portuguese minister to the United States, a gentleman attached to Botany. J. B.

#### ART. IX .- Miscellaneous Articles.

MEDICINAL PROPERTIES OF THE TOMATO.—Of the hygienic, or healthful properties of the tomato, Prof. Rafinesque says,—"It is everywhere deemed a very healthy vegetable, and an invaluable article for food."

Prof. Dickson writes,—"I think it more wholesome than any other acid sauce."

Robley Dunglison, M. D., late Professor in the University of Virginia, and now of the University of Maryland, says,—"It may be looked upon as one of the most wholesome and valuable esculents that belong to the vegetable kingdom."

Many other like authorities might be quoted in proof of its hygienic powers, but I consider it unnecessary; I will only add that I am led to wonder at the folly and infatuation of many of my professional brethren, in carrying forward the sword of devastation against the health and happiness of the human family, in the support of deleterious substances, to the utter exclusion of this article, whose salutary and benign influences upon all who use it, are so apparent and perspicuous that the most ordinary observer can but appreciate them, as well as the most scientific practitioner of the healing art; but I choose to tread the rugged path of duty in placing its virtues before an intellectual and reading community - my fellow citizens. For acts of this kind, according to Virgil, we may even claim the best delights of Elysium; for he says they "were showered upon those who received wounds for their country, who lived unspotted priests, who uttered verses worthy of Apollo, or who, like Very, consecrated their lives to the useful arts."

Mr Thomas writes me—"I have no positive evidence within my own experience of its medical properties, though the sauce is very grateful to persons recovering from fever. The late Doctor H. G. Spofford says,—'I often find myself incommoded and my health impaired by inaction of the stomach and bowels. This is always in some degree accompanied with a sense of straitness of the chest; and besides a general uneasiness and lassitude, with head-ache and some degree of pain in the region of the liver. The appetite becomes imperfect, with a peculiar taste of the mouth as if something was wanting. The tomato at once removes the taste of the mouth; in a little time quickens the action of the liver and

bowels, and removes all those symptoms and feelings. It seems to me that of all articles of diet or medicine that have come to my knowledge, the tomato acts most directly upon the liver. Several other persons of my acquaintance have derived similar benefits from its use. It has saved me from the necessity of using cathartics."

Prof. Rafinesque says, —" As a medical article for the liver, etc., it is a new fact, unknown even in Europe and India."

The Indians use it as a diuretic, and to expel concretions from the kidneys. E. B. Barton, M. D., Professor of the Medical College of Louisiana, writes me under date —

#### New Orleans, Nov. 28, 1835.

"I have read your publication on this subject (the tomato) with great interest, and if subsequent experience shall sustain your position of its having a specific influence on the liver and being a substitute for calomel, you will confer lasting benefit upon your country, and erect an enduring monument to your own reptuation. In it I most cordially wish you success, both as a philanthropist and an American — and I feelingly do it after having, for 16 years, witnessed the horrible ravages committed by calomel."

I have used with decided advantage in a variety of complaints, and hope to be able to exhibit its remedial powers in so lucid a manner that all attempts at refutation will prove illusory and vapid. I shall consider its medicinal agency as applicable to special cases under separate heads.

### DYSPEPSIA (INDIGESTION.)

In a public lecture, introductory to my course in the Willoughby University of Lake Erie, in the fall of 1834, I stated that the tomato, when used as an article of diet, was almost a sovereign remedy for dyspepsia or indigestion: and from subsequent experience I am more fully confirmed in the opinion. The tomato effects a cure in dyspeptic cases—

Ist. By its power of solution. Since my appointment in the University of Bellevue Hospital, I have received testimony of an indubitable character, that the tomato possesses, in an eminent degree, the power of dissolving the food in the stomach, and thus supplying the place of the gastric juice, when there is a deficiency in the secretion of that fluid, (and there usually is in such cases,) either in quality or quantity; and that it is, undoubtedly, out of the body, in the same temperature, a most powerful solvent. — Dr Cook's Treatise.

# QUINCY MARKET.

(Reported for the Horticultural Register.)

APPLES, Baldwins b	arrel 2 00	2 25
Greenings,	" 2 00	2 25
Russetts,	" 2 00	
Bell flowers	<b>2</b> 50	
PEARS, Iron, b	ushel 3 00	
CATHARINE,	" 3 00	
CRANBERRIES,	" 8 00	8 50
CHESNUTS,	" 3 00	3 50
CAULIFLOWERS,	nead 37	75
CELERY, White Solid, and Rose Colored, - r	oot 12	25
CABBAGE, Red Dutch, d	ozen 50	62
Green Globe Savoy,	62	75
Large Drumhead,	" 50	75
HORSE RADISH, po	ound 10	12
RADISHES, Early, bu	unch 12	
Turnip Rooted,	" 12	17
LETTUCE ROSE or Tennisball,	head 6	8
POTATOES, Chenangoes, bu	shel 75	1 00
Eastport,	" 75	1 00
St Helena,	" 1 00	1 25
SQUASHES, Crook neck, po	ound 9	10
Valparaiso,	" 5	6
SHAGBARKS, ba	arrel 4 00	4 25
ONIONS, White Portugal, bu	ishel 1 00	1 25
Red,	" 1 00	1 25
Bunch Onions, hu	ndred 4 00	4 25
PICKLED CUCUMBERS, ga	llon 31	37
DRIED APPLES, po	und 4	5
LONG BLOOD BEETS, bu	shel 1 00	
PARSNEPS, Large Dutch,	" 75	1 00
TURNIPS, White Flat	" 50	
Ruta Baga	" 50	
Long Yellow French,	50	

Boston, Feb. 23, 1837.

# MORTICULTURAL REGISTER.

AND

#### GARDENER'S MAGAZINE.

APRIL 1, 1837.

## ART. I .- Landscape Gardening.

There is in many persons even of intelligence and liberality of feeling, a secret recoil at the mention of ornamental arts — a fear that their introduction among our citizens would prove inimical to that virtue and simplicity of manners, which can alone establish and perpetuate our institutions. This is a natural feeling, and doubtless to a certain extent arises from just views; but when entertained towards those arts which serve only to improve the intellect and purify the taste, it does them great injustice. Indeed, their cultivation, instead of being connected with luxury and licentiousness, will often be found to operate as a check upon these evils; and this we believe is especially the case with that art which serves to improve the attractions of the country, and to render more delightful the enjoyments of home.

A remarkable characteristic of the people of our nation, is a fondness for change. This is beneficial to a certain limit, as it impels to industry, to enterprise and improvement. But it is often carried to such an extent as to become a positive evil. It results in a restlessness of habit which approaches that of some of the wandering nations of Asia. We are dissatisfied with the present good. We let go the happiness within our power, and grasp at other enjoyments, often beyond our reach. This constant motion and unsettlement cannot do otherwise than exert a pernicious influence. Even the permanency of our republican edifice is hazarded by it, for what foundation can endure upon a moving mass of sand?

And how is this to be prevented, how is this evil to be overcome? A powerful means would certainly be to induce a taste for moral improvement, and for embellishing the scenery about our homes, which would greatly contribute to the increase of our attachment to them, and to make us satisfied and contented. A love of nature, it is said, is a love of our country; not less so, then, is nature when improved by art, and applied by our own hands to increasing the attractions of our native land.

The moral effect of improvements of this nature has been frequently pointed out. "In Scotland," observes a late writer, "the regularity and polish even of a turnpike road, has some influence of this kind upon the low people of the neighborhood. They become fond of regularity and neatness, which is displayed, first upon their yards and little enclosures, and next within their doors. A taste for regularity and neatness, thus acquired, is extended by degrees to dress, and even to behavior and manners." The fascinating beauty which sometimes distinguishes "the cottage homes of England," where roses, honeysuckles, and jasmines, cluster around the white walls, is said to contribute powerfully to the preservation of the moral habits of the occupants, by inspiring a taste for domestic enjoyments, instead of a desire for the company and noisy bustle of the tippling shop.

In urging the importance of a greater attention to landscape gardening, we are far from desiring an extravagant outlay of expense. We never wish to see in this country, such an extent of ornamental grounds, as is so frequently to be met with on the other side of the Atlantic, where whole square miles are exclusively appropriated to this purpose. Our object is not so much to recommend expenditure, as to direct it in such a way as to produce the greatest effect. We must remonstrate against the exceedingly unwise method, so repugnant to all taste, in which the improvements of a farm are not unfrequently commenced and carried on. The first thing, when a spot is fixed on for a house, if it be in a new country especially, is to cut down all the native trees and shrubs within several rods of it. The proprietor then sets to work and applies his whole resources to build as large a house as possible. When the work is completed his funds are exhausted; he can make no further improvements about his house; it is left standing, dreary and alone, perhaps unpainted, an unsightly broken fence to enclose

it, and the nakedness of the yard only relieved by an old barrel, a pile of wood, and broken hoops and boards. Sometimes indeed a more finished appearance is presented; the house is neatly painted, a handsome grass plat extends before it, and a picket fence encircles it. But still there is a sad deficiency in shade. A row of Lombardy poplars, or half a dozen plum trees, are the most it can boast of. Now, instead of expending so much in erecting large and showy buildings, let at least a small sum be reserved for improvements in planting trees and shrubbery. Half an acre of ground about a house, and fifty dollars appropriated to planting it, would contribute far more to its appearance, than two thousand dollars expended in additional embellishments of the house alone.

There is no way in which the same amount of ornamental effect can be produced as by planting. Look for instance at some of our villages which are proverbially handsome. What gives them their beauty? Not the architecture, for this frequently has but comparatively a small share. Many villages are by no means beautiful which have even a lavish expense bestowed upon their buildings. It is the taste displayed in introducing the graceful trees with which the streets are decorated; it is the ornamental shrubbery which embellishes the small yards in front of the neat private dwellings; and all this is effected at a most trifling expense.

But as planting alone, without a judicious arrangement, cannot produce nearly so pleasing an effect as where such arrangement is adopted, we shall proceed to offer some hints upon the subject.

A garden has been defined as "a place where, by the aid of culture, vegetable productions may be raised, more excellent in kind, and more pleasing in distribution, than in the ordinary growth of nature." An ornamental garden, therefore, is where the beauties of nature are accumulated on one spot, freed from a mixture of what is unsightly or not positively pleasing, and arranged so as to form the most agreeable assemblage as a whole.

Formerly it was the universal practice to dispose all the parts of ornamental grounds generally, in squares, right lines, circles and other mathematical figures; and a regularity of arrangement was observed amounting sometimes to the utmost stiffness. This has, and more especially as it relates to shrubbery and trees, given way to the modern and more improved style; to freer and more varied forms; to a plan of embellished nature, imitative of the scenery of

a real landscape. The old style addressed itself more to a love of novelty than to the taste; hence grotesque and imitative forms were largely introduced; trees were shorn into the form of pyramids and statues, hedges were made to resemble smooth walls, and every effort was made

To form with verdure what the builder formed With stone.

From the novelty of such objects, many, even at the present time, prefer the old style, but the pleasure arising from this love of novelty is soon exhausted. But the almost endless diversity of the natural landscape presents an inexhaustible store of new forms.

The uniformity produced by straight walks and alleys bordered by regular rows of trees, another characteristic of the old or geometrical style, though pleasing at first, soon becomes tiresome. The visitor enters the ground and passes from walk to walk, and it is all the same. The dimensions shrink, from this uniformity, and however finished it may appear, it ceases to interest him. He looks along the long straight walk, and though it may be lined with beautiful trees, it is only a repetition of the same thing over and over, and why should he go further? No new beauties are to be developed; he finds the same long vista constantly before him; he becomes fatigued and turns listlessly away. But let the walks be winding, and every step leads to some new scene; every turn displays new and constantly varying beauties. The geometric style, however, though frequently, is not always necessarily connected with uniformity; and whenever it is adopted by those who still prefer it, as great a variety as possible should be studied. Thus for instance, let the walks be of every variety, now broad and open, now shaded and narrow, at one time opening on a distant landscape, at another leading to a rocky glen, a cascade, or a fountain.

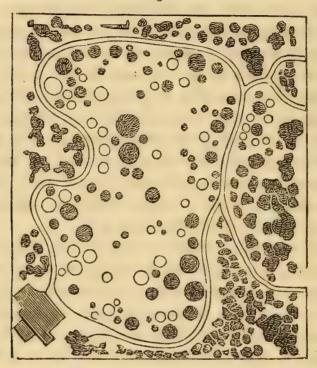
Confining ourselves to the modern or natural style, we shall proceed to offer some remarks on its characteristics. Landscape gardens in this style generally present either picturesque, or what is termed gardenesque scenery. Picturesque scenery is a fac-simile imitation of natural scenery; the trees and shrubs constituting it are planted, as in natural forests and forest-groups, such as a painter would wish to copy; every appearance of art is concealed, and it exactly resembles a real landscape, except in the greater variety and profusion of pleasing assemblages within a smaller space than

can be found in nature. Its effect as a whole, only, is studied. In gardenesque scenery, not only the general effect is studied, but the separate beauty of the different trees and shrubs, and herbaceous flowering plants, are also displayed; art is not concealed, and although the effect of the individual parts at a near view is sought, yet at a distance the whole appears to group so as to form a pleasing whole, as in picturesque scenery. The picturesque is calculated to please particularly the admirers of landscape scenery in nature; the gardenesque not only these, but the florist and botanist also. When herbaceous flowers are introduced into picturesque scenes, they are allowed to run wild, and the soil is left uncultivated about them; but when they are made to form a part of gardenesque scenery, they should receive the highest cultivation, so as to exhibit them individually to the best advantage. In picturesque scenery, the trees may be allowed to grow thick or irregular, provided they form an agreeable collective effect; but in the gardenesque, every thing irregular or rough should be removed, which would prevent a neat and finished appearance.

In gardens consisting chiefly of herbaceous flowering plants, greater regularity of arrangement is admissible than in one comprising only trees and shrubs; and is in some cases to be preferred, as less skill is required in the arrangement. In general the best effect is produced, where the beds are of regular figure, and are arrranged so as to form a picturesque whole. Thus, in the accompanying plan, (Fig. 1,) the beds are all regular figures, being circles. "The simplicity of the circular form," says Loudon, "is a great recommendation to it, both in point of beauty in itself, and in regard to setting off the flowers to advantage, each circle being as it were a nosegay; it is besides the most convenient form for culture, and for renewing the soil. The different diameters of the circles, and their different disposition on the turf, will produce a variety and intricacy of outline, that cannot be attained by any other means whatever." In the plan here given, the large beds are supposed to be planted with flowering shrubs, and the smaller chiefly with flowers. The best effect is produced where shrubs and flowers are planted in separate beds, not only because they do not harmonize when too closely intermixed, but they cannot be cultivated to so good advantage. One of the most common errors, and one of the greatest defects in most ornamental gardens, is that of

promiscuously mixing these together. The beds in this plan are never nearer to each other nor to the walk than a certain distance, for instance three feet. They may be from three to to twenty feet in diameter. The intermediate space is a "dry smooth shaven green;" and a winding walk passes round the whole, beyond which are groups and masses of the larger trees. It will be ob-

Fig. 1.



served that, as the garden has the greatest extent diagonally from the house, it is left open in that direction, in order to give the appearance of a more extensive prospect. The above plan, with a few alterations, is taken from Loudon's Magazine.

Where herbaceous flowering plants alone are employed to fill the beds, the same rules of arrangement will apply, substituting the taller for the shrubs, and placing the more humble in the smaller beds. Their size should, however, in this case be diminished.

The disposition of the plants in the beds, so as to produce pleasing assemblages, as well as to harmonize in forming a whole, is a subject for the exercise of much thought and skill. In general those plants which are placed in close proximity, should not be widely different from each other in some leading expression of appearance. For instance, each group or mass may be limited for the most part to varieties of the same species, or to species of the

same genus. In others, different genera of the same natural order may be comprised within a bed. Evergreens, such as pines and spruces, should be grouped together; and broad and narrow leaved plants should unite, each in their separate clumps; as the magnolia and tulip tree on one hand, and the acacias and Robinias on the other. Sometimes, however, a resemblance in some points, and a contrast in others, produces a pleasing effect. In a small flower garden, says Loudon, "which I very much admire, I have seen a group composed of myrtles and China roses, placed alternately in quincunx order, the larger plants being in the centre; and in my opinion, a better effect was produced than if the two species had been in separate masses; the rich green color of the myrtle's leaves, forming a ground to the beautiful white of the flower; the light and elegant foliage and pendant bloom of the rose; the mingled color and the associations connected with both, made an impression upon me which I shall not easily forget. In the same garden there is a group consisting of an acacia, a sumach, and a labarnum. The light feathery elegance of the acacia, the broader and more shadowy plumes of the sumach, and the pendulous clusters of flowers of the labarnum, compose a little picture of the most highly finished character."

In forming plantations of trees and shrubs, so as to produce a pleasing landscape effect, few rules can be given which would apply generally. The difference of natural situation, and of aspect, and the various features of different grounds, would preclude the attempt of giving minute directions suitable alike for all situations. There are, however, many rules which may frequently apply, and which, by the aid of a moderate judgment, may be adopted or rejected as circumstances dictate. And there are a few which are in a greater or less degree adapted to all cases.

In grounds of any considerable extent, the view of the whole should never be taken in at once; but it should be so divided into different scenes or compartments, which may be bounded by trees, that only a small part is visible at first to the spectator; but as he advances, new and varied prospects open upon him, so that he is agreeably surprised to find, that what at first seemed to terminate his view, only served to introduce him to new beauties.

The same or similar scenes should never be twice presented to the eye; hence there should be as great variety of objects introduced as is possible. Sometimes the walk should be densely bordered or overhung with foliage; at others it should open upon beautiful or extensive prospects: one while it may lead beside a running stream; at another it may present "cascades, rocks and caves."

But variety should never be introduced at the expense of order, or proper relation between parts; but the different scenes should follow each other in natural and pleasing succession. The spectator should never be startled or taken suddenly by surprise, for that is the lowest kind of art. He should not be led from the flower garden to the stately forest, without passing through the intermediate grades; the level, the hilly, the smooth, the rocky, the chaste and finished, the wild and rude, should not follow each other at random or so as to produce violent contrasts, but by free and natural succession.

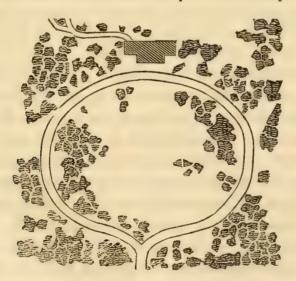
A frequent error in landscape gardens, is a multiplicity and confusion of objects. So many things are crowded together, that the spectator does not know to which to direct his attention first. The walks are often so numerous and so intricate, that they only serve to perplex. This may be easily avoided by adopting as a rule, that there shall be but one principal or leading walk throughout the whole. It may, by easy curves, be conducted in sight of every material object of view, and return finally to the place of entrance. In this way the same scene need never be exhibited twice. From this main walk there may be branches, to exhibit different scenes in detail; but it ought to be an invariable rule, that these episodal walks should never be one half the width of the principal walk, and should always branch off nearly at right angles from it, so that a stranger may never mistake one of them for the main walk. Where flowers are introduced they should commonly be in beds near the walk, while the taller shrubs and trees should be placed back more at a distance.

At favorable points, and those only, should the view be left open for more distant scenes. Sometimes by a judicious arrangement, the same objects seen from different places, may be made to present quite different aspects by appearing to group differently. The walk should be so directed as not to exhibit these views except at the most advantageous points. A bend in a walk should always exist from some cause either real or apparent. An apparent one

may always be produced by groups of trees, appearing to require it, where no real one exists.

Architectural and other ornaments may be introduced, according to the means of the proprietor. When properly distributed they add much to the effect. Seats and arbors should be placed at points affording interesting wiews, alcoves and rotundas on eminences, and hermitages in secluded places. Foot bridges are always pleasing where there are streams. Fountains are going out of use, though we think without sufficient reason. In more frequented grounds, such as public squares in towns, we think them particularly appropriate. We would not, however, propose even for these, such expensive fountains as are frequently seen in Europe, where water is poured forth in immense volumes in marble basins, amid tritons and sea horses, and cars. A single streak of water would be a more pleasing object. A late writer thus speaks of a simple fountain in Marseilles in France. "It is a large basin of water elevated five or six feet, and handsomely sodded around; from the centre shoots up to a great height, a simple, delicate silvery jet. I have seen the splendid fountains in the portico of St. Peters at Rome, but they did not affect me with half the pleasure that was given by this simple small stream amid the green well arched trees."

We shall conclude this article with a few remarks on planting the grounds in front of mansions and private country dwellings, a



subject in which all should be interested. Few are able to devote much ground or much expense in extensive ornamental planta-

tions; but all may decorate the immediate vicinity of their residences.

The house should be situated at some distance from the road, which distance should be greater or less according as the house is large or small, and it should be on a moderate rise of ground, There should be a spacious open lawn or grass ground in front, which should be unoccupied by any objects except an occasional small group of trees, and these should be placed a little on one side or the other, leaving the centre open. The front of the house, especially if it be of finished architecture, should be uncovered, or nearly so; while the other sides may be planted with thick groups of trees which may extend towards the public road, widening as they approach it, and contracting towards the house. The best view of the surrounding grounds should never be displayed until reaching the house. If it is situated on an eminence, the back as well as front view may be exhibited to great advantage, and the effect will be heightened if a view of water can be then enjoyed. Limited prospects and neighboring buildings not worthy of notice, may be concealed by plantations of trees. The appearance of distance may be increased by planting trees of dark green and large dense foliage on the foreground, and those of light and airy foliage in the distance; this will produce the same effect as shades in a landscape picture. Trees and shrubs in front of the house should be planted and pruned so as to present a chaste and neat appearance; imitations, therefore, of the wilder scenes of nature, such as rocks, cascades, old trees, and festoons of climbing plants, should be situated back and more remote.

The accompanying plan is of such a place as any farmer in comfortable circumstances is supposed to be able to possess, and only represents the ground in front of the house, as few would wish to undertake more. It is not given as a model, for it doubtless might be varied in most cases to advantage, but in order to represent the usual disposition of trees in groups and masses; and to show that the mere planting of a few trees may be made to add much to the appearance of country dwellings.

One of the most common errors which we have observed in planting about houses, is that of placing trees in straight rows, without any regard to the stiffness it produces. A less frequent error is the opposite extreme; an excess of irregularity is intro-

duced, and a tedious monotony is produced by this indiscriminate mixture. Sometimes we see a large lawn in front of the house, with a line of shrubs and trees running round it, just broad enough to admit a gravel walk winding through it, which by many short irregular twists and turns, opens alternately upon the lawn and boundary fence, thus continually presenting the same thing over and over without any variation, and producing a sort of uniform irregularity. Walks perfectly straight would be much better, for then there would be no failure by attempting to accomplish too much.

In conclusion, we would remark, that our principal object has been to call attention to this interesting subject. We would not wish our readers to follow implicitly any rules laid down here or elsewhere, but to cultivate their own taste and use their own judgment. Although we have but few instances of fine landscape gardening in this country, yet an inexhaustible store of ideas may be derived from the beautiful and ever varying natural scenery which our country so richly affords. Much too, may be learned from some of the excellent works which have appeared on the subject. If we have succeeded in drawing the attention of our readers to these, we shall consider our efforts as not in vain.—Gen. Farmer.

# ART. II. — Caterpillars. Extract of a letter from Sydney, C. Briton, N. S.

I have read the article on Caterpillars in the Horticultural Register. Nothing there is applicable to my Caterpillars. They first make their appearance very minute, on the edges of the Gooseberry and Currant leaves, as early in the spring as the leaves are produced. They always eat on the edge of the leaf, and soon strip the bushes completely. They are then about three quarters of an inch long, of the color of the leaf, and what becomes of them I cannot tell. By the time fresh leaves appear, new swarms are ready, though at first so minute, it requires a good eye to perceive them, but the destruction they commit, soon points them out. Thus, the bushes produce leaves, and are as regularly stripped of them, several times in the season; of course they dwindle and die. I have often gath-

ered all the Caterpillars from a few bushes, but it is of little use, as they are soon attacked again. The insect is green all over, round bodied like a quill, and smooth. I never observed them in proceeding along the ground, when shaken off the tree; to go otherwise than with a regular creeping motion, but when disturbed feeding on the leaf, they invariably draw one end up to the other, hunching their backs as if about to set off in the manner of the Caterpillars, called "Surveyors." I have tried all the methods of extirpation I could think of, or which I have read, to no sort of purpose. What is curious, they appear confined to my premises, I cannot learn that any other person in the place knows anything whatever about them. With me, they effectually prevent the growth of Currants and Gooseberries, except the black Currants, which they never touch. Raspberries are also destroyed by Caterpillars of the same color and habits, except that they eat the leaves in holes instead from the edge; and these insects differ from the others, in being rough or hairy, but quite green - they live on the upper side of the leaf. These, also, appear peculiar to my grounds. No one else knows them. If any of your scientific correspondents would throw some light on the subject, and give me any information by which I could get rid of these tormentors, they would greatly oblige me.

ART. III. — On the Appearance and Metamorphose of the Lower Vegetable Organizations. By Professor Hornschuch, of Greifswald. Translated from the German by Andrew R. Rud.

To find out the influence of the soil on the formation of the musci (mosses,) in the year 1821, I filled several small pots with different species of soil which had been exposed to a glowing heat, that if there were any spora existing in it, it might be destroyed; the pots were then put in a summer box or frame in the botanical garden, where they shared equal care, receiving the same quantity of water and exposed to the same influence of light. A longer time passed before organical functions appeared than is required for soil not exposed to heat; but the formation once begun, the growth of the moss plants was very rapid. The pots were provided with saucers, which at all times were kept filled with water from the same res-

ervoir. The moss plants had soon gained height enough, so that the genera to which they belonged could be designated, and the following results appeared. The pot filled with a poor clay, and which had first shewn a vellow green, almost glittering cover on its surface, developed confervæ-like forms, which combined themselves into moss plants, that most evidently belonged to a species of Barbula, without doubt, Barbula fallax. The second pot, filled with clean sand, produced on the surface a very thin cover, and to the naked eye, almost imperceptible confervæ-like threads, presenting a few bunches of moss plants, which most evidently characterized themselves as Byrum argenteum. The third and last pot was filled with leaf mould; on its surface first appeared a cover of dark green slimy substance, from which was afterwards developed confervælike threads, and finally numerous moss plants which characterized themselves as Mnium, and probably Mnium hornum. But the most striking result was from a pot divided by a partition into three parts. Each of the partitions was filled with one of the three named species of soil, and the young moss plants in each partition, corresponded exactly with those in the pots containing the same analogous earth.

After the process had proceeded thus far, my observations were interrupted, as I was obliged to be absent on a long journey. When I returned, the summer box was broken up, and the pots put away and partly emptied; thus the experiment was disturbed. As the aim of the observations was only to find out the influence of the soil on the generation of the musci, under otherwise equal influences, I did not analyze the lower vegetable organizations, which went on before the formation of the mosses, in respect to their genera and species. The result of their observation goes to prove, that under equal influences of light, moisture and temperature, different mosses are generated, in the different species of soil in which they are produced. The longer time necessary for the generation of the vegetable formations, in the soil exposed to heat, may be accounted for by the fact, that all the organical substances are disturbed by the heat, or at least altered and made far less soluble; and the greater quantity of vegetable formations in the pot filled with leaf earth, is caused by the superior richness of that species of soil in organical substances.

REMARKS, BY ANDREW R. RUD. - The preceding experiments are of that kind to which many objections may be given, as to the preparation and management of the soils, &c. Every one who is interested in the case, will not trust too much upon the experiments of others, but try for himself. The greatest objections to these, are, that the seeds may be given to the soils by the air, or by the water. If the pots had been covered with bell glasses, and watered with distilled water, the objections would have been far less. for the preliminary formation of slime and confervæ-like threads, it may be said that the musci are plants of a higher order, and therefore require a soil more provided with nourishment than the first rudiments of all vegetable organizations. As for the three different species of soil, producing three different species of moss, it may be, that like some of the other lower vegetable formations, they can only thrive under certain circumstances, or are highly depending upon the surrounding medium, and that this medium or these circumstances may promote or retard their development. The cultivator sees in his every day's experience, that plants in a healthy state permit no cruptogames to vegetate on them, while unhealthy plants abound in them, and they are more or less numerous, according to the circumstances which produce the disease. These experiments are highly interesting, and open a wide field for reflection to the philosophic mind. It might, perhaps, have been possible, to have given these experiments a practical utility, by ascertaining how the mechanical mixture of the soils, promoted or retarded the growth of the different species, in various soils from the pure pulverized granite, to the purest vegetable mould. The gardener has remedies enough to disturb the moss vegetation, but yet some of them like to know the laws, why they do so or otherwise.

ART. IV.—Shepardia or Buffalo Berry.—Winship's Nursery, Brighton, Mass.

FRIEND:— You know we were old confederates in robbing the morn of certain hours, which dairy maids and other early risers say belong to her.— With all the prejudices of early education,

strengthened by long habits of sloth in the morning, I had become a confirmed skeptic in the hearing of any such statement as that there is such an hour as 6 A. M., and such a daily event as sunrise. Anxious to be convinced, I directed a trustworthy person to give me a call at that rumored time of day, and "to make assurance doubly sure," as Shakspeare says, I fixed my alarm watch so that its tintinabulation should break the dead ear of morn, at the precise time aforesaid, 6 A. M. Well, between them both, I was actually awakened—rose—and drew on my habiliments.

One daring deed accomplished, leads to the attempt of others. I sallied forth to enjoy an antebreakfast walk in mid winter. It was a piece of temerity I know, but a man who can turn out at 6 A. M. can do anything "strange and unnatural." Chance led me in my peregrinations within hearing of the depot bell of the Worcester Railroad, and all at once it happened to pop into my head that your old friends, the Messrs Winships, or, as we style them the Captain and the Squire, enjoy all the inconveniences of a convenient distance from the metropolis, at Brighton, four miles out. With an aptness of memory which can only be conceived by one who wants a breakfast, it also occurred to me that I had a standing invitation from those gentlemen to visit them whenever it suited my leisure - and when so suitable a time as when I had redeemed three hours from sleep? Of the reception I met, and all that, I will not tantalize you by speaking. The nursery of young, useful and ornamental trees, looked more extensive in its winter desolation, than it looks beautiful in its summer foliage - just like any nursery except - and the exception is one half the reason of my writing - very tender affection for you, and self-laudation being the other half.

It was neither more nor less than a fruit tree in full bearing. In a green house? you say. No. Not only had it been exposed to all the rigors of the winter, but it takes a smart chance of frost to bring its fruit to maturity. I enquired its name and the Captain called it the Shepardia eleagnoides. Whereat I requested him to pencil that name down for the benefit of my botanical friends, and to give me another which I might use in the vernacular. He then offered me the silver leaf Shepardia, but that had still a smack of the pagan in it, and to accommodate my predilection for a Christian name, he then told me that I might call it the Buffalo Berry Tree.

It will live in almost any climate - the harder the better - being a native of the Rocky mountains. The tree forms an elegant continual ornament for any gentleman's grounds; being in summer clothed with a rich egg-leaved foliage, bright green on the upper side, and delicate silver beneath; and in winter red, with thick clusters of its fruit. This latter is in size and shape like a currant. and in taste has a pleasant tartness, which I can liken exactly to nothing else I have tasted. Preserved, it makes an elegant jam, They have quite a nursery of fruit-bearing trees, ready for transplanting in the spring. The parent tree, now about twenty feet in height, was raised from seed, received per mail from Wm. F. Redding of Baltimore, 15 years ago. Uncle Sam's mail carriers had no fancy, when transporting the letter, that they were carrying an elegant feature of the New England landscape - or what will be an elegant feature when people become acquainted with the tree. If they are not persuaded to transplant it to their grounds for its own sake, they will certainly give it the preference over others, when the matter of planting trees is decided on, without reference to this particular one.

Its name indicates the fondness of wild animals for it; and hunters frequently make it an essential part of their food, even before their stores are exhausted, or much diminished. The Captain has quite a bevy of pensioners in the robins, who, by wintering with him, seem tacitly to accuse the southern climes of having noth ng better to offer them than the Buffalo Berry — sometimes called the American Olive, but why, I cannot exactly imagine.

After sufficiently admiring the tree, and the green-house of the Messrs Winships, one of those gentlemen politely offered me a seat in his chaise, and took Watertown in the way to Boston, to call at Mr Cushing's place, and at Mount Auburn.— The first feature that strikes the visitor at the conservatory of Mr Cushing, is its peculiarly happy location. A grove of pine trees (natural growth) protects it from the easterly winds, and the approach to the mansion, is an avenue shaded by forest trees. A fountain is in the centre of the area — sealed, of course, in the winter season, and extensive ranges of trellis work for grapes and other vines, with a floor of strawberries, &c. must make the space before the green-houses one of the most delightful spots conceivable in its season. Should I protract my visit to this Northern world into the summer, I shall

take opportunity to enjoy a visit to it — as I certainly shall to the Messrs Winship. Entering the greenhouse, the first object which strikes the visitor, is the disposition of a number of beautiful orange trees, so arranged that their yellow fruit is an admirable contrast with the deep green foliage of other plants, which conceals all their trunks. Time and space would fail me, to enumerate even the names of the rare and beautiful exotics from every quarter of the globe, which are here collected; much less is it possible to attempt a description of them. All commendation is due, however, to the pure taste which led the proprietor of this Eden thus to appropriate a portion of his abundant means - and all praise should be accorded to Mr Haggerston, the intelligent gardener, for his share in the disposition and culture of plants requiring so dissimilar management as is supposed, by their various origins. It does appear to me, that no person who lives thus "among the roses" can be but improved and rendered better, kinder, and more susceptible to the best impulses of our nature, by converse and communion at all times with the most beautiful things in creation.

At Mount Auburn, we did not alight. Had we done so, my space would not suffice to enter into a description. The aspect of the spot as we passed it, suggested only the gloomier thoughts of which death is the prompter — but with that gloom came relief, from the natural connexion of the promise of the return of spring, the regeneration of the vernal features of the place, and the beautiful mystery of the resurrection from the dead, taught by our holy religion.

Yours,

ART. V. — New or Handsome Flowering Plants. Noticed by the Editor of the Floricultural Cabinet, in England.

During the last summer, we have taken two tours, and visited many of the principal gardens in the country, as well as nursery establishments, with the intention of seeing what new plants were deserving of recommendation to our readers. The following list contains a portion of what we saw, and all of which are showy and interesting.

Buddlea madagascariensis. — A greenhouse species of great

beauty, and blooming for a considerable season, well deserving a place in every collection.

Bignonia jasminoides.— A noble looking plant, with large dark green leaves, and fine trussses of flowers. It is well worthy a place in every greenhouse. It is probable that it would bear the open air like the other species.

Solana Lambertiana.— This is a fine large leaved species, bearing a corymb of pretty purplish blue flowers, which are rendered still more striking with its fine yellow anthers.

Clematis azurea. —This new species is most beautiful and deserves a place in every greenhouse or conservatory. It has been lately introduced into this country, but from whence we know not. We saw it blooming freely in the greenhouse of Mr Lowe, Clapton Nursery, near London. It is a most valuable acquisition. Being a climber, it will be peculiarly adapted for making a show up a pillar, along a trellis, or trained up a wire frame. The plant appears to grow freely in a rich loamy soil.

Spirea argenteo.— Silvery leaved. A hardy shrub of great beauty, bearing handsome reddish colored blossoms.

Gesneria splendens.— A most strikingly handsome flowering species, and which we were informed would flourish freely with a greenhouse temperature. The flowers are near two inches long, of a brilliant scarlet color, marked with a very dark crimson spot. The plant produces a profusion of blossoms. It deserves a place in every collection.

Nuttalia papavar, var. grandiflora. — The plant is nearly hardy, and blooms freely. The flowers are of a deep rosy red color, each of which was from two and a half to three inches in diameter. The plant well deserves a place in every flower garden.

Phlox Drummondii.— A figure of this beautiful flowering annual we gave early this year. We have seen three kinds in bloom, the original species, and two varieties which are very handsome, one of the varieties has pink colored flowers, and the other very nearly a velvet color. There are some other varieties which we saw, but not of equal interest with those we mention Every flower garden should be ornamented with these plants, and when grown in pots in a greenhouse, they are fine summer ornaments for the purpose.

Cytisus elegans. — A new and handsome yellow flowering species, requiring, as we understood, to be grown in the greenhouse.

Hova illicifolia. — A fine flowering species, with handsome foliage, it deserves a place in every greenhouse.

Manettia glabra. — Its very handsome trumpet shaped flowers, of a fine red color, and produced in profusion, renders this plant more desirable for the greenhouse. The plant may be obtained, two or three feet high for half a crown; no person, we think, would regret the purchase.

Poinsettia pulcherrimus. — This plant is becoming much in repute, that part of it, which answers the purpose of a splendid flower, is the bracteal leaves; they extend to the dimensions of from twelve to twenty inches across, and are of a fine crimson-red color, at once most strikingly grand. It will require a hothouse temperature, we are informed, though we saw very healthy plants growing in a greenhouse in October. The price of a small plant would be £2, and of a plant three or four feet high, from £7 to £10.

Tropæolum. — A new kind with fine yellow flowers, the form of T. tricolorum. Being produced in abundance, renders it a desirable species; Mr Thompson, Nurseryman, Beaulah, near Norwood, Surry, has fine plants of it for sale. It has been imported from Valparaiso. Mr Thompson offers plants of it at one guinea each, and they are well deserving the price.

Rhododendron ponticum var. flora plena, Double flowered. A very pretty lilac purple flowered variety; it deserves a place in the shrubbery.

Gillardia picta. — The profusion of beautiful blossoms which this plant produces, renders it one of the most showy. The large crimson red centre, margined with bright yellow, and the flower two inches across, makes a splendid appearance. We recommend it for every flower garden. Plants may be obtained at two shillings each; or seed may be procured at a reasonable charge.

Verbena pulchella alba. — This is a white flowering variety of this pretty creeping plant. Very suitable for rock-work, or dwarf edging for a bed, or border — it is cheap.

Verbena Drummondii. — Much the habit of V. Lambertii, but much more robust, having flowers larger, and of a deeper rosy-red color. It may be procured at two shillings each.

Salvia leucantha. — A very pretty species which we saw growing in the select and well managed collection of Mrs Marryatt, Wimbledon. We shall give further particulars of many scarce and valuable plants we saw in this enchanted place.

Silene flos aculi plena, Double flowering. This is a very pretty flowering plant; very free in blooming. The flowers are of a rosy-lilac color. It merits a place in every flower garden.

Gardoqii Hookerii.— A most beautiful flowering plant, which deserves a place in every greenhouse. The plant is a most profuse bloomer; the flowers, each an inch and a half long, of a fine orange-red color, producing a most imposing appearance. The plant appears to grow freely in sandy peat. It strikes well from cuttings; the old plants are apt to die off, but a supply of young plants should, we think, always be kept up. No person will regret the purchase of the plant—it may be procured at a moderate cost.

Lantana Cellowii. — A very pretty flowering species, of recent introduction.

Brugmansia aurea, Golden flowered. The flowers are larger than those of B. sanguinea. It is a very desirable species to cultivate with the suaveolens and sanguinea.

Linum cummingia. — A very handsome flowering flax, with very pretty yellow flowers. The plant deserves a place in every greenhouse.

Pultenea subumbellata. —This is a very handsome flowering plant; its neat growth, pretty flowers, and profusion of them, recommend it to every greenhouse.

Samolus prostrata. — This is a pretty flowering greenhouse plant, flowers freely. The blossoms are small, but very neat.

Frankenia pauciflora. — The specific name very ill accords with the profusion of flowers produced. The plant merits a place in every greenhouse.

Pultenea vestita. — A very handsome flowering plant of this neat and pretty tribe. It is far the handsomest of any we know, and deserves to be in every greenhouse.

Rubus Chinensis. — A new species, of singular and pretty growth. We have heard this plant very highly spoken of, and recommended to every collection of greenhouse plants. It was not in bloom when we saw the plant, but if we recollect right, the flowers, it was said, were large and of a pink color.

Melaleuca. — A new species, the specific name not known. It is of a dwarfish habit, bearing abundance of flowers of a fine pink color. This deserves a place in every collection.

Statice arborea; S. foliosa; and S. puberala. — We saw plants of these new and fine flowering species at Mr Lowes; the two latter we

have seen in bloom, and consider them pretty. We have been informed that twentyfive pounds per plant, is asked for the first named kind, by the nurserymen in Scotland, where it has bloomed, and attracted considerable notice.

Euphorbia Jacquinii. — A new and handsome species, the flowers something like Poinsettia pulcherrima. It deserves a place in every collection. If we mistake not, we were told it would flourish well in the greenhouse.

Gompholobium mucronata. — A beautiful flowering species — the yellow and red blossoms being produced in profusion. It is a very desirable plant for the greenhouse.

Solanum arborea. — A fine looking stove species, producing large lilac colored blossoms, making a pretty appearance.

Stephanotus floribundas. — A very neat and pretty flowering plant, making a pretty appearance in September, October and November; very ornamental to the greenhouse.

# ART. VI.—On the Reporting of Greenhouse Plants, &c. By a Practical Gardener in Staffordshire.

On account of the variety and number of greenhouse plants, it is rather difficult to reduce them to any one certain rule; not only because they are less expensive, and consequently more cultivated, but also that our milder climates, are found to produce plants in greater abundance than the Torrid Zone.

Therefore the business of shifting is, in general, a weighty concern. To be enabled to execute this business with regularity, every preparation should be previously made, and the different sorts of mould laid up in a shed; as well to keep them from becoming too wet for use by sudden showers, as from getting too dry by the action of the sun, or arid winds which may be expected at this season. Also on wet days (if nothing more urgent is to be done) let a quantity of old broken pots be made small, to serve for draining to the tenderer sorts; the coarse siftings of peat being sufficient for the stronger growing kinds.

Things being thus in readiness about the middle or end of M ay the general shifting should be commenced; in order to which, let

some of the plants be carried to the shed, and carefully proceeded with in the manner already directed for hothouse plants; observing, above all things, not to injure the roots, but gently to loosen them with the hand in such a manner, that the mat of roots, which is generally formed on the outside, may not remain entire; whereby they will soon strike into the fresh mould that encompasses them.

Greenhouse plants for the most part require a considerable share of pot room, as many of them are very free growers; but still great caution is necessary, to avoid over potting the tender weak growing kinds. When shifted, let them be tied up if requisite, and well watered. It will be also necessary to shade them for a few days from the influence of the sun and winds, until they are perfectly established in the fresh mould. Any dead or ill-grown parts can now be with propriety cut away, so as to give their heads a regular neat appearance: by observing this process, it will be found, that though a temporary check may be the consequence, they will soon flourish and do much credit to the operator by their healthy appearance and progress.

It being mentioned that shelter and occasional shade is necessary for a few days when they are first placed in the greenhouse, I must add, that should the weather prove dark, and cloudy, this work may be omitted: however, if hot sunny weather ensue, it will be indispensably necessary; and also, to water them twice or thrice a day when first potted, observing to wet the leaves as little as possible.

By the middle of June, it will be time to think of preparing the out-door departments, in which it is intended the plants should stand during the summer months.

The most eligible situations for this purpose are, the north aspect of vacant walls, or hedges, where they will be a little shaded from the noonday sun, or between rows of close hedges, particularly planted, and solely appropriated to this purpose. I can by no means espouse or recommend the practice, of setting them close under the shade or branches of large trees; as the plants are thereby inevitably drawn into a weak state in a few weeks, and those who adopt such situations, are not unfrequently under the disagreeable necessity of throwing away many of perhaps their most rare plants, every autumn; and even those that remain will have a bad unsightly appearance. Indeed shelter from the winds, is the great desideratum, to prevent their being upset, for in my opinion, most

greenhouse plants are fond of the warmth of the sun, except when recently potted, provided their roots are kept moderately moist. Let us look for a moment to the arid mountains of the Cape, and there we shall find them exposed to its full glare, and perhaps without water for months: their roots however can penetrate deeper there than they can possibly do in pot, so that life is preserved, and as soon as the periodical rains commence, they resume in a very little time their verdure, and "breathe their balmy fragrance all around."

Some gardeners' practice is to plunge them amongst the shrubs and flowers of the pleasure ground; this answers pretty well with the strong growing kinds; such as myrtles, geraniums, coronillas, &c., old plants or supernumeraries that will not be wanted to house in the autumn; and even has a very pretty effect when judiciously done; but it will by no means do for the tenderer species. Therefore, upon the whole, the most unexceptionable situations, are such as at the same time afford a moderate portion of shade, and are so situated, as to break the force of those strong gales, which frequently blow in the summer, and early autumn months, and yet allow that free circulation of air so necessary to the well-being of plants in general, and at all seasons. Having fixed on the place they are to stand, it must be thoroughly cleansed from weeds, and the hedges, if any, neatly clipped. It should then be well rolled, to make it perfectly firm and level, over it a layer of good lime, slacked, and made into the consistency of thick white wash, should be poured, and allowed to soak into the surface; this I recommend as being a strong preventative against worms getting into the pots; which is always injurious to the plants. When this is dry, let about an inch of finely sifted coal-ashes, be regularly laid on, and firmly rolled a second time.

Being thus prepared, the plants may be brought out and set regularly and level on the surface; in whatever form may best suit the situation or the fancy of the proprietor. Even on this subject a few observations may not be unnecessary.

Therefore in placing them, it should be endeavored to give them a loose, easy but yet judicious manner; which is by far more handsome than the stiff, shorn-like front admired by some: any plants that may be in flower, should be placed in conspicuous situations, but not so as to make the clump look in the least tawdry; simplic-

ity and neatness are the principal objects to be considered in this, as well as the other decorations of the flower garden; another circumstance to be remembered is, that now as their summer growth commences, it will be necessary to allow each plant sufficient room to spread according to its natural habit of growing; and also to be careful, that the curious tender sorts, (which are frequently the most valuable,) are not crowded by the large free growing kinds. Indeed they should be set as well as heaths, in a separate clump as they lose a good deal of their interest, by being confounded with large shewy plants that attract the eye, at the first glance, from the more delicate and minute, but to many not less attractive species.

Should the weather prove dry when they are thus set in their clumps, they must be freely watered; particularly in the afternoon, when the sun has nearly run his course. A good washing also with an engine, or syringe, at times in the absence of the sun, will be of considerable service to them; but if any individual plant should at any time become too wet, let it be placed apart from the rest, and not watered again until it evidently requires it; this is a circumstance which I shall have occasion to mention hereafter; all that is necessary now, for a few weeks, is to pick off dead or withered leaves, and weeds of every description; and a regular attention to the directions already given.

# ART. VII. - Equivocal Generations.

However ridiculous it may now appear, yet there was a time when philosophers believed the material elements possessed the chemical power of producing vegetables without conforming to the ordinary laws of generation. The exertion of this extraordinary power, on account of the uncertainty attending its results, was very appropriately termed equivocal generation; but we should think its absurdity had been long enough exposed to prevent its imposing upon the most credulous and unthinking. But opposed as it is by all the laws of nature, so far as they are manifested by known analogy, it occasionally attempts to force itself upon our understanding, through the medium of some anomalous production — and there are men, even at the present enlightened day, who, if they cannot

explain the phenomena of nature, will adopt an inconsistent doctrine, rather than admit the loss of facts sufficient to establish a theory consistent with its known economy. Among this class of theorists we should expect to find a writer in a late Genesee Farmer, who, from the fact that chess was found growing in a field where it was not known to have been sown, and upon stalks of wheat, the heads of which had been bitten off by a horse, infers that wheat is converted into chess by some unknown process of nature.

Before we can consent to become converts to the doctrine of equivocal generation, the writer must furnish more conclusive evidence — for cases of the kind vastly stronger have presented themselves and been fully explained. The theory of the late President Dwight on these apparent cases of equivocal generation is simple, rational, and, in our mind, satisfactory. He says — "The seeds of vegetables, when lodged beneath the stratum of earth, within which they germinate, have no apparent tendency to decay; but continue to possess all their vegetative power through an indefinite number of centuries. When the existing forest is cut down, and its seeds are destroyed by cultivation, those, which were shed by a more ancient growth, being thrown up by the plough within the limits of this stratum, spring in their turn, and cover the surface with trees of a new kind."

In support of this theory he cites the following cases, which, among others, were within his knowledge. "A field about five miles from Northampton on an eminence called Rail Hill, was cultivated about a century ago. The native growth here, and in all the surrounding region, was wholly oak, chesnut, &c. As the field belonged to my grandfather, I had the best opportunity of learning its history. It contained about five acres, in the form of an irregular parallelogram. As the savages rendered the cultivation dangerous, it was given up. On this ground there sprung up a grove of white pines, covering the field, and retaining its figure exactly. So far as I remember, there was not a single oak or chesnut tree. Pines were as thick as they could conveniently grow; and when I first saw them, about the year 1760, had attained a considerable size. When I last saw them, more than 20 years afterwards, they were large trees; yet there was not a single pine, whose seeds were or, probably, had for ages been, sufficiently near to have been planted on the spot. The facts, that these white pines covered this field

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exactly, so as to preserve both his extent and figure, and that there were none in the neighborhood, are decisive proofs that cultivation brought up the seeds of a former forest within the limits of vegetation, and gave them an opportunity to germinate. The regularity and limits of the processes are entirely inconsistent with the doctrine of equivocal generation.

"A respectable farmer in Guilford informed me, some years since, that thirty years before the event, to which I principally refer in this paragraph, took place, his father, while reaping a field of wheat, found a quantity of chess, which he directed the laborers to reap also, and bind in bundles to be carried home for fodder. On the day when the wheat was carried home, it was inconvenient to carry the chess; it was therefore thrown together upon a bank, or headland. The following night it was drenched with rain, and finally left to rot upon the place. Thirty years after this fact, the field having come by his father's death into the possession of my informant, it became necessary to make a new fence between that and another bordering upon it; but as a considerable number of bushes had grown up upon the head land, on both sides, he concluded to remove the fence, and break up these head lands. The ground was accordingly cleared and ploughed, and on the spot where the chess had been thrown, there sprung up a new crop of chess, as evenly spread, as if it had been sown by a skillful hand.

"The Hon. Judge Reeve of Litchfield, told me some years ago, that a farmer of his acquaintance, having sown some turnips, and suffered some of them to remain on a field, they produced seed, the following year, which was scattered on the ground. For twentyfive years afterwards, i. e. to the time when the fact was mentioned to me, whenever this field was ploughed, turnips in considerable numbers sprung up in this spot.

"Mr Parker, an English gentleman from Yorkshire, who came some years since to the United States as the Agent from the merchants of England to the government of this country, informed me, that a tract of marshy ground on the eastern shore of England had, some years before, been purchased by several gentlemen and drained. On the earth, which was thrown out of the ditches cut through it, there sprung up a great quantity of white mustard. As this plant had not been known to grow anywhere in the vicinity, within the remembrance of any living man, its appearance excited

much curiosity. After many schemes to account for it, had been prepared, and rejected, it was found that, two hundred years before, white mustard had been extensively cultivated on the same spot, by a colony of Dutch settlers.

"I will conclude these observations by mentioning a remarkable fact communicated to me by the Hon. Judge Chipman of Vermont. This gentleman told me, that when he resided at Kingston, in the county of Addison, there customarily sprung up, in the cultivated fields, on his estate, an immense multitude of cherry trees, of a peculiar species. The original forest had been composed of beech, maple, hemlock, &c., and appeared as ancient as any American forest whatever. It was perfectly destitute of cherry trees. As he was walking in a field, newly broken up, and recently ploughed, he observed the infant stems of these cherry trees sprung up in very great numbers. His workman, who believed in the doctrine of equivocal generation, triumphantly asked him whence he supposed these trees to proceed? Without answering the question, he forced his hand a little distance into the earth, and drew up a handful of cherrystones."—Silk Cult.

## ART. VIII. - Heartsease. By Mr. Todd.

HAVING paid considerable attention to the propagation and subsequent culture of the Heartsease, I am induced to send the following observations upon this interesting and beautiful flowering plant, hoping it may be of some interest to those who read it.

So strikingly handsome and attractive are the flowers, and so easy of propagation, generating at a most surprising rate, that I hesitate not to say, that the Heartsease will, ere long, become the pride of every garden, from the humble cottage to the splendid palace.

The family of this pretty flowering plant, comprises a vast variety of colors and form. It is to me, quite astonishing that such perfect flowers should have been produced by their progenitors. I could refer to many such by name, but as some of the readers of the Cabinet may not know them, I beg to state what are, in my opinion, the properties of a good flower. Whatever the colors are, they should be clear, and distinct; not blended and suffused together. The

should occupy about one-half, and the lower petal be about one quarter, the two side petals exhibiting to front view the other quarter. The whole of the petals should join neatly together so as to form a flat surface, combining to compose a circle, as near as may be, allowing for a small deviation from the circumference line at the places where the petals meet, and the incurvature of the lower edge of the bottom petal. The merits of the flower are judged by its perfection of form in the above respects, and not to size, a large wavy edged, or wavy surfaced flower, would be far inferior to a small one possessing the properties above described. On no account should size be substituted for form in estimating the merits of the flower. The mode of treatment I pursue, is simple, but very successful.

Early in May I take off the small suckers that are appearing above ground, of which there is usually a free supply from the old parents, I cut them off close to the old plant, at a joint; I then pot them off in sand, about an inch of each being inserted therein. I water them well at that time to settle the soil close to the stems, and in an hour afterwards I cover them closely with a hand glass, which is not removed from off them till they are rooted, this is easily ascertained by the tops pushing.

I take care to shade them on sunny days. When rooted, I take them up and transplant them into a nursery bed, in a warm situation, there they remain till about the middle of July, at which time I put them out, with as much earth adhering to the roots as possible, into the places where they are intended to bloom, which they will do all the end of the summer and autumn, and flourish exceedingly fine the following spring.

When the plants have grown very vigorously, and the shoots are long, I cut them down rather closely, after which they soon recover. By this mode of treatment they very far exceed anything I ever saw of Heartsease elsewhere.

I never keep plants beyond the second year, as they get too bushy, and the flowers are small, compared with those the year old plants produced. The soil I bloom them in, is as follows; — Two parts loam, one part sandy peat, and the other well rotted hot-bed dung; these are well blended together.

Those plants I intend to grow for producing flowers for exhibition, I plant in a half shady situation, the colors are thus preserved pure and clear.—Floricultural Cabinet.

## ART. IX .- Gardener's Work for April.

THE first thing this month to be attended to, is the hotbed, if it has not already been made. We know that there are many who pretend to have a good kitchen garden, and yet have never had a hot-bed; but in our climate it is impossible to have a complete assortment of vegetables in their season without one. Were it only for one vegetable, the tomato, we would have a hotbed; but there are many others, that will more than pay all the trouble and expense. Plants of various description may be forwarded and turned out or transplanted in the open ground in May or June. We have been informed that in Denmark, melons are planted in the hot-bed in small, cheap, open baskets, which are transferred to the open ground without disturbing the roots; being full of holes, the roots meet with no obstruction, and the basket soon decays. Tomatoes may be planted in the same way. Cucumbers for early use may be obtained a month earlier by the same treatment, and we venture to say much cheaper than to plant in the open ground in May, with the usual perplexities of having to plant three or four times over, and the continual watching for destructive insects, which make such havoc with weak vine plants. Many plants of ornament cannot be enjoyed without a start in the hot-bed, and when we consider how much may be added to the kitchen and flower garden, we would recommend to every one who has a garden, to make one without delay. We suppose a majority of our readers are fully informed upon the subject; but for those who are not, we give the following instructions, copied from M'Ma-

Frames.— Large frames ought to be made of inch and a half or rather two inch plank, of the best yellow pine, 9 ft. 2 in. long, 4 ft. 10 in. wide, as high again in the back as in the front, to give the top a due slope to the sun and a proper declivity to carry off the wet when covered with glass lights, to move off and on occasionally; every joint ought to be tongued, the better to prevent the admission of cold air into, or emission of warm air out of the bed, but in such manner, as the gardener may think proper. The back and front are to be nailed to corner posts, so as to admit the ends to fit in neatly, which ends are to be made fast to the posts by iron bolts,

keyed in the inside, for the greater facility of taking the frame asunder when necessary; each end must be made one inch and a half higher than the back and front, so as that one half its thickness may be grooved out on the inside, for the sash to rest and slide on, and the other half left for its support on the inside; when finished, give it two or three good coats of paint before you use it, and with a little care and an annual painting, it may last you twenty years.

These frames will take three lights of three feet wide each, each light containing five rows of glass frames, six inches by four, overlapping one another about half an inch, which, of all other sizes is the most preferable, on account of their cheapness in the first place, the closeness of their lap, their general strength and trifling expense of their repairs; however each person will suit his own convenience as to the size of the glass. Where the sashes when laid on the frame meet, a piece of pine about three and a half inches broad and near two thick, should run from back to front, morticed into each, for their support, and for them to slide on; in the centre of which, as well as in the ends of the frame, it will be well to make a groove five eighths of an inch wide and near a quarter of an inch deep, rounded at bottom to receive and carry off any wet which may work down between the sashes.

Method of making a Hot-Bed.—Provide the requisite supply of good horse stable dung, consisting of that formed of the moist stable litter and dunging of the horses together, choosing that which is moderately fresh, moist and full of heat — always preferring that which is of lively, warm, steamy quality, and of which take the long and short together as it occurs, in proper quality as above. If the dung is rank it would be proper to prepare it a little to an improved state, more successful for that purpose, by forking the whole up into a heap, mixing it well together, and let it thus remain eight or ten days to ferment equally, and for the rank steam and fierce heat to transpire.

Choose a place on which to make your hot-bed in a dry sheltered part of the garden, open to the morning and south sun; it may be made either wholly on the surface of the ground or in a shallow trench, of from six to twelve inches deep and four or five feet wide, according to the frame: if made on the surface, which is the most eligible, it affords an opportunity of lining the sides of the bed with fresh horse dung, quite down to the bottom, to augment the

heat when it declines, and also prevents wet from settling about the bottom of the bed, as often happens when made in a trench, which chills the dung and causes the heat to soon decay.

Then according to the size of the frame, mark out the dimensions of the bed, either on the ground or with four stakes, making an allowance for it to be about four or five inches wider than the frame each way; this done, begin to make the bed accordingly, observing to shake and mix the dung well as you lay it on the bed, but I would not advise treading it; for a bed which is trodden hard will not work so kindly, and be more liable to burn than that which is suffered to settle gradually itself: proceed in this manner until the bed has arrived at the height of four feet, which will not be too much, making an allowance for its settling six or eight inches, or more, in a week or fortnight's time; and as soon as finished, let the frame and glass be put on: keep them close till the heat comes up, then raise the glass behind that the steam may pass away.

The next thing to be observed is about earthing the bed, in which to sow the seed, and for which occasion should have a proper supply of rich, light, dry earth, or compost, ready at this season, under some airy shed or hovel, covered at top to keep out rain, that the earth may be properly dry; for if too moist or wet at the time, it would prove greatly detrimental both to the growth of the seed and young plants, as well as be very apt to cake and burn at bottom next to the dung, by the strong heat of the bed: three or four days after the bed is made prepare to earth it, observing previously if it has settled unequally, to take off the frame and glasses, and level any inequalities; make the surface smooth, put on the frame again, and then lay therein as much of the above mentioned earth as will cover the whole top surface of the bed about three or four inches thick. In two or three days you may sow your seeds, after which put on the lights or glasses close, but when the steam rises copiously give it vent by raising one corner of the upper end of the lights half an inch. Cover the glasses of the hot-bed every evening an hour before sunset, if mild weather, earlier if bad, with garden mats, uncover them every morning between 8 and 9 o'clock. The plants should have air every day.

Cabbages. — Sow all the early varieties of cabbage seed, and by the time the earth is warm enough to receive the plants into its bosom in the open air, they will be ready to be removed thither, and if judiciously managed in setting out and after culture, they will head a month sooner than those planted in the open ground.

#### OPEN GROUND.

Carrots and Parsnips. — As soon as the frost is out of the ground, you may begin to sow the seeds of these roots and thence up to the first of June; the sooner they are in the larger the roots will be. The early horn carrot is said to be the best for early use, and the long orange for the main crop.

Onions. — It is said by the knowing ones that onions should be be sown in the old of the moon in April; but we have always sown without regard to the moon, getting in the seed by the 20th if possible, as it does much better than to omit it until the first of May.

Peas. — As soon as the frost is out of the ground, all sorts of early peas should be sown: this is generally the case about the first of the month; they are very hardy and not injured by frost and the light falls of snow which sometimes occur this month. Peas should be planted at intervals of a week or two throughout the spring, to secure a succession of crops throughout the season. "The soil most suitable for peas, is a light sandy loam, though they will grow well in any ground, except it be in a stiff, tenacious, cold clay. From three to four feet is a good distance for the rows to be apart, the peas to be dropped about four inches asunder. Generous manuring tends not only to increase the quality of their product, but to accelerate the maturity of the pea family. The peas should be stuck before the plants throw out runners.

Windsor Beans. — All of this tribe of vegetables may very safely be planted in open culture about the 20th of this month.

Asparagus.—Your asparagus beds should be forked and dressed as soon as the frost is out. In forking be especially careful to stir and loosen every part of your beds, and equally so not to go deep enough to wound the crowns of the roots.

If you desire to make new plantations of this vegetable, you may with perfect safety put out your plants as soon as the ground is rid of the effects of the winter frosts.

Turnips. — If you have a desire to have early turnips for your table, sow the seed any time after the 20th of this month.

Lettuce, asparagus, cabbages, broccoli, cauliflower, sea kale, &c.

may be sown any time this month to succeed such as may be forwarded in the hot-bed.

Early Potatoes. — Should the weather admit, you should get in your early potatoes from the middle to the latter end of the month. But all efforts will be useless, unless you give a liberal supply of manure, and bestow much care in the preparation of the soil-Your ground should have a southerly exposure, and if not a good soil naturally, should be made so by art.

"All the fruit trees in your garden may now be advantageously trimmed and pruned—so also your gooseberry, currant and raspberry bushes; the cuttings taken from the three last should be planted out to form the material for future plantations of these excellent and healthful fruits. Let the ground be thoroughly stirred around the old bushes.

Grapes.—The earlier after the frost is out of the ground that you transplant vines, or put out your cutlings the better, for it is important that they each start in their growth with the earliest vegetating power of the earth in spring.

Rose, snow-ball, lilac, and all other bushes of the flowering tribes, should be set out as early this month as possible.

As soon as the plants in your strawberry beds push through the earth, the beds should receive a dressing. Clear out all the weeds, decayed leaves, and old runners: loosen the earth around the plants, and apply some rich mould about them, digging it in so as to prevent a loss from evaporation or washing."

Herbaceous Plants. — Herbaceous plants of every description should be removed if necessary, as soon as they begin to grow, which will be the case with most kinds during the month; the present is also a suitable time to propagate many sorts.

J. B.

#### ART. X. - Miscellaneous Articles.

On Tree Mignonette.—Sow seed of the common Mignonette, towards the end of February, in pots of the size thirtytwo's, such being near six inches deep, and four and a half in diameter, inside measure. Use a good rich loamy soil. After the seed is sown, place the pots in a cucumber or melon frame. When the plants are up, they must be placed where they can get air, to prevent their being drawn up weakly as well as to preserve them from damping off. When the plants have made a few leaves, pull up all the plants but two, which must be allowed to remain till they get over danger from damping off, when the best may be retained and be secured to a support. As the plants grow, side shoots will push, they must be pinched off, always leaving the leaf at the base of each shoot which contributes to its growth. If the leading shoot should shew flower, it must also be pinched off.

When the plants have grown ten or twelve inches high, they may be removed to a warm part of the green house. Water must be given when the plants are dry. As the season advances the plants must be placed in more airy situations, which will gradually harden them. When the plants have reached a desirable height, from half a yard to two feet is desirable, pinch off the heads. This will induce a number of lateral shoots to push and form a bushy head. Plants thus treated will blossom early the following spring; after they have shewed flowers, the plants, if vigorous, may be removed, with balls entire, into pots a size larger; they will then blossom all the season.—Flori. Cabinet.

To Obtain Flowers from Bulbous Roots in three Weeks.—Put quick lime into a flower pot until it is rather more than half full: fill up with good earth: plant the bulbs in the usual manner: keep the earth slightly damp. The heat given out by the lime will rise through the earth, which will temper its fineness: in this manner, flowers may be obtained in three weeks.—Magazine of Domestic Economy.

ON THE CONTRASTING COLORS OF FLOWERS TO PRODUCE THE BEST EFFECT.—To demonstrate the theory of colors; then, a circular card may be divided into seven compartments, by lines drawn

from the centre to the circumference, one compartment being painted red, the next orange, the third yellow, the fourth green, the fifth blue, the sixth purple, the seventh violet. Let water colors or patterns of ribbon, of each of these respective colors, be procured, and arranged in the enumerated order. It will be found that any one of these colors is producible, by due admixture of the two adjacent colors. The first and third, red paint mixed with yellow, produce the second color, orange. The second and fourth, orange mixed with green, produce the third, yellow: the third and fifth, yellow and blue, generate green, the fourth color; that and the sixth, form the fifth blue; the fifth and seventh, violet, create the sixth, purple; the sixth and first, red, constitute the seventh, violet; the seventh and second, orange, terminate in the first, red. What then is the necessary conclusion, but that in the order of prismatic colors, adjacent colors are inharmonious; and that harmony results only from union of two colors, distant in order by one intermediate tint? The principle productive of harmony being thus discovered, may receive confirmation, by experiments with ribbons of different colors, blended, or with sewing silks twisted, in the preceding order of arrangement. Yet, beauty resulting not only from harmony, but also from contrast, the next inquiry is, from what principle to produce the latter effect. It is discoverable from the following experiment. To patterns of ribbons or silk, of the seven preceding colors, let white and black be added; and all be placed in a perpendicular line, the white above the red, the black beneath the violet, adapting the numbers to the altered arrangement, the white being denominated one, the red two, and so on, the violet being marked eight, and the black nine. By advancing black to the side of white, or as it is accounted the absorption or absence of all colors to the accumulation or presence of all, the strongest possible contrast is produced. Violet and purple will also contrast with white, in decreasing ratio; while the remaining colors produce a very inferior degree of contrast, by no means eligible from their approximation to white, in graduated reflexion of light. On a similar principle, the best contrast to black next to white, is red, as the colors ranking first of the seven in order of refraction, therefore first in the power of reflexion; orange is an inferior contrast, but yellow, blue, purple, or violet, from graduated absorption of light, present no contrast to its entire absorption, tlack. In the same manner red receives no contrast

from the two nearest colors in the prismatic gradation, orange or yellow, but from the semicolor green; it admits the lowest contrast in blue, higher in purple, or violet, and the highest as already remarked, in black. The decisive inference then is, that contrast is not producible without passing over two prismatic colors at least. Such being fixed laws, constituting the primary principle of the theory of colors, and demonstrable by experiments multifarious and conclusive, their application to landscape gardening and the disposing of flowers in the flower-garden, &c., involves not the slightest difficulty, and solves numerous phenomena. Why, for instance, does verdure, or why do shrubs, supply the best relief to gaudy flowers? On account of excellent contrast, green being a sober color intermediate between the deeper and higher tints, consequently affording a foil to all.

Why is snow injurious to the effect of foliage, or flowers, of every graduated tint? On account of its glaring whiteness, supplying neither contrast nor harmony; white entering into the composition of every shade of tint, and particularly being productive of semicolors; consequently, being a component principle, when uncombined it can neither harmonize, nor contrast with itself. Why does the olive tint of the expanding oak leaf offend the eye of taste? Because, its being composed of green in combination with yellow, the component principle can neither harmonise nor contrast with itself, in a simple compounded tint, in the surrounding grass, or foliage of more forward trees. Why does the verdant herbage of spring produce inferior picturesque effect, in ground ornamented with trees, than the sterile grass of early autumn, consequent on mowing? Because, spring grass and foliage are gradations of one and the same color, consequently, in whatever variety of gradation, the diversified tints of any color, neither harmonizing nor contrasting, cannot possibly be productive of picturesque effects.

Contrariant is the effect of sterile grass, on account of its russet tint, like ripened corn, presenting advantageous contrast; russet being a semi-color, uncompounded of green. Countless natural phenomena, with their solutions, might be multiplied, illustrative of the preceding theory of colors being of practical utility in gardening.—Dennis's Landscape Gardening.

THE PITCHER-PLANT. - There is not, perhaps, among the numerous examples that occur of the provident economy of nature, in the vegetable part of the creation, a more remarkable instance of contrivance adapted to circumstances, and of means suited to the end, than what is evidently displayed in a plant which is commonly met with in Ceylon, and other islands of the east, and which has obtained the appropriate name of the Pitcher-plant. Being the inhabitant of a tropical climate, and found on the most dry and stony situations, nature has furnished it with the means of an ample supply of moisture, without which it would have withered and perished. To the footstalk of each leaf, near the base, is attached a kind of bag, shaped like a pitcher, of the same consistence and color as the leaf in the early state of its growth, but changing with age to a reddish purple. It is girt round with an oblique band or hoop, and covered with a lid neatly fitted, and movable on a kind of hinge or strong fibre, which passing, over the handle, connects the vessel with the leaf. By the shrinking or contracting of this fibre the lid is drawn open whenever the weather is showery, or dews fall, which would appear to be just the contrary of what usually happens in nature, though the contraction probably is occasioned by the hot and dry atmosphere, and the expansion does not take place till the moisture has fallen and saturated the pitcher. When this is the case the cover falls down, and it closes so firmly as to prevent any evaporation from taking place. The water having gradually absorbed through the handle into the footstalk of the leaf, gives vigor to the leaf itself, and sustenance to the plant. As soon as the pitchers are exhausted, the lids again open, to admit whatever moisture may fall; and when the plant has produced its seed, and the dry season fairly sets in, it withers with all the covers of the pitchers standing open. - Barrow's Cochin China.

A MODE OF PRODUCING TWO CROPS OF GRAPES, IN ONE HOUSE, IN ONE YEAR.— Loudon's October number of his Gardener's Magazine contains an account, by a correspondent, of his method of cultivating the grape, by which he obtains two crops in one year, and had not, for the space of five years, lost a single crop. He has but a limited quantity of glass, and that of the worst sort, being that he had used over his pine pits. He has a house 30 feet long, 16 feet rafters, 30 inches front glass, with eleven vines planted outside; five

of which are excited for the spring crop, and six for the autumn, crop. The five vines were turned out of the house in the middle of May, 1835. When the six vines for the late crop were introduced, those turning out were laid upon a flat trellis in front of the house. the wood being ripe at the end of July, at which time they were pruned upon the spur system. Each vine was divided at the entrance into the house, and formed into two principals, which are the full length of each of the rafters. In a week or so after pruning, the vines were covered, to keep them both cold and dark, until Oct. 26, when they were introduced into the house, and the six others placed in their situation. These six had been introduced in the middle of May, 1835, and had matured their crops, and ripened their wood. The other five had sprung their buds above an inch when put into the house, and were pruned with two stems, one vine being divided at its entrance into the house, and made into two principals, so that the rafters were completely furnished. The crop was 180 lbs., independently of what was cut for the table of Mr Loudon's correspondent.

The five vines taken in on October 26, were immediately wrapt with coarse sacking and well moistened with cold spring water. The house was kept low, until every bud had sprung or swelled, when the sacking was released, and in a few days taken off. The buds all pushed vigorously, and were in full bloom by Christmas morning. The usual hot-house rules were followed afterwards; only keeping the house cool in the evenings. Instead of a high moist heat, a cool dry atmosphere is necessary. The fuel used was small coal made into the form of bricks with clay.— Balt. Far.

Potatoes.—Every experiment in the production of this estimable root, is interesting to the public, and none can be more so than the following. The Rev. Mr Ramsay of Arbroath, Scotland, commenced digging early potatoes on the 28th of June, which he had planted in his garden; and after removing the potatoes, he immediately replanted the stems. On the 12th ultimo, he commenced digging a second time, and although the first crop was considered good, the second was found superior — more numerous, larger, and of better quality.

ON CULTIVATING THE ERYTHROLENA CONSPICUA.—My pleasure ground is laid out with small clumps of different shapes. clump is planted with white dahlias, another with yellow and so on. I am fully convinced that by having each clump planted in this manner, the superiority of one flower over the other is more fully seen and the effect more striking. The clump next to the one planted with white dahlias I had planted with erythrolena conspicua, and I do assure you the effect was most beautiful. The plant is of very easy culture; I recommend the seed to be sown under a handglass in March, and when the plants are three or four inches high, to be placed singly into pots, and kept in a frame until the middle of May, when they may be turned out of the pots into the clump. The soil I find them to thrive the best in, is a rich loam. I have had plants this season from five to seven feet high, and completely covered with fine large bright scarlet flowers. Should you consider this worth noticing, you shall hear from me again.—Flor. Cab.

BEAUTIFUL VARIETIES OF PINKS. — Very many beautiful varieties of the pink may be obtained by the following process: Just before sunrise, carefully open the flower to be operated upon, and extract the anthers with small pincers. About nine o'clock, place the ripe pollen upon the stigma of the flower, and repeat this two or three times in the course of the day. If the act of impregnation has taken place, the flower will fade in 24 or 36 hours, but if not, it will remain in bloom and beauty, in which case the attempt must be repeated. This should be done in fine weather, and the flower should be defended from rain or mist. Plants raised from the seeds which have been crossed, bear the form of the mother, but take the color of the male parent. These are less visited by bees than others. These are curious facts. — Southern Ag.

To the Ladies.—It is said, if you fill flower pots about half full of quick lime, cover over this a good mould, the flowers may be thus obtained in a very short time and at all seasons! The earth should be kept slightly moistened and pressed down whenever it rises by the swelling of the lime. — Ib.

OIL FROM VEGETABLES. A discovery has been made in England, by which oil may be obtained in greater abundance from the seeds of vegetables, by applying to them diluted muriatic acid.—Ib.

# QUINCY MARKET.

(Reported for the Horticultural Register.)

(leopoitod for the livinouseaux reg	12001.)		
APPLES, Baldwins	barrel	2 00	2 25
Greenings,	"	2 00	2 25
Russetts,	66	2 00	
Bell flowers	66	2 50	
PEARS, Iron,	bushel	3 00	
CATHARINE,	66	3 00	
CRANBERRIES,	"	8 00	8 50
CHESNUTS,	66	3 00	3 50
CAULIFLOWERS,	head	37	75
CELERY, White Solid, and Rose Colored,	root	12	25
CABBAGE, Red Dutch,	dozen	50	62
Green Globe Savoy,	66	62	75
Large Drumhead,	ec .	50	75
HORSE RADISH,	pound	10	12
RADISHES, Early,	bunch	12	
Turnip Rooted,	66	12	17
LETTUCE ROSE or Tennisball,	head	6	8
POTATOES, Chenangoes,	bushel	75	1 00
Eastport,	66	75	1 00
St Helena,	66	1 00	1 25
DANDELIONS,	l peck	75	
SQUASHES, Crook neck,	pound	9	10
Valparaiso,	"	5	ě.
SHAGBARKS,	barrel	4 00	4 25
ONIONS, White Portugal,	bushel	1 00	1 25
Red,	66	1 00	1 25
Bunch Onions,	hundred	4 00	4 25
PICKLED CUCUMBERS,	gallon	31	37
DRIED APPLES,	pound	4	5
LONG BLOOD BEETS,	bushel	1 00	
PARSNEPS, Large Dutch,	"	75	1 00
TURNIPS, White Flat		50	
Ruta Baga	"	50	
Long Yellow French,	"	50	
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Boston, March 25, 1837.

# HORTICULTURAL REGISTER.

AND

### GARDENER'S MAGAZINE.

MAY 1, 1837.

# ART. I. Remarks upon the Natural Order Campanula. — By J. E. TESCHEMACHER.

[We have been favored by our valuable correspondent with the following communication, which we have no doubt will be read with interest by the lovers of plants, as it describes not only one of the loveliest genera, but also contains remarks well calculated for the benefit of the most inexperienced cultivator. We are confident that we express the feelings of our readers when we say, that communications which so eminently combine good practice with sound theory, will always be acceptable.—Edrs.]

THE approach of spring appears to thaw the ideas and revivify the senses of those attached to the cultivation of the soil; and the true lover of nature, discovering the first green blades of grass peeping from their brown sheaths, or watching the beautiful tints of his herbaceous plants, as they successively burst the surface of the earth, and seem to woo the warm rays of the sun, needs not to envy the feelings of the miser counting his hoard, or the king upon his throne.

The current of his ideas begins suddenly to flow in a different channel, and the beauties of his garden rise in vivid images before him, filling his mind with all the charming delights of anticipation—perfect, as they are, neither devoured in the bud by the devastating caterpillar, or nipped ere unfolded by the unseasonable northern blast—anticipation is unalloyed, reality subject to disappointment. The only quarrel I have with the gorgeous and ever-blooming plants of the greenhouse, is, that the constant enjoyment of them deadens the force of this elasticity of the heart in the early spring.

With the exception of the rose and a few other especial favorites, the Campanula tribe have always appeared to me a chief ornament both of the garden and the bouquet — and as many of the most handsome of the species are easily procured, and require but little skill and care to cultivate, I have thought that a description of some of them would not be unacceptable to your readers.

Those who take a fancy to this tribe and make a collection, will not fail to be struck with the variety of form both in the flower and foliage. Some, as in the Canterbury bell, Campanula media, have a large, wide and deep shaped flower; while in C. rapunculoides it is elegantly long, narrow, and pendent, the segments of the margin pointed and a little reflexed or bent back; in the peach-leaved, C. persicæfolia, the flower is broadly and roundly campanule; shallow, very showy, but not so elegant; — some, as C. pyramidalis and C. media, grow from three to five feet high, and are thus fit for the back of the flower border; while others, as C. pumila and erinus, more modestly enamel the surface with their lively colors, and are better adapted for the front of the parterre.

It is not my intention to enter into any botanical details of this tribe farther than to state that the most recent and approved arrangement of the Campanulaceæ is by the monograph of Alph. De Candolle, son of the celebrated professor De Candolle of Geneva, and this is now the generally received authority on this subject.

The name Campanula is a diminutive of the Italian Campana, a bell, the flowers of a greater part of the tribe being bell shaped; an extremely graceful form, particularly when pendent. The spikes of many are finely pyramidal and the flowers crowded, therefore elegant and shewy; they do not very readily fade, and if pains be taken to cut off the flowers as they droop, so as to prevent the seed from forming, fresh ones will succeed, and the plants may be kept in beauty during the whole summer and autumn; their colors are bright, varying from an intense purplish blue to a pure snowy white.

Foremost in the list stands the unrivalled

Campanula pyramidalis, both white and blue—commonly called in England the Chimney Campanula from its being often used to stand before the chimney in the summer, one single well grown plant being sufficient to conceal the whole space. It is certainly the most beautiful of the tribe; the stems are crowded

from the root, and the flowers so thickly studded on them that scarcely a particle of green is visible. It is not hardy enough to bear exposure during the winter, and is therefore usually grown in pots.

I cannot do better than refer the cultivator to page 423 of the 1st Vol. of the Hort. Reg. for the best method of raising fine plants; but from the care and attention required, it is more a gardener's plant, than one for the private amateur; it will however amply repay any care that may be bestowed on it.

Campanula media, the Canterbury bell — blue and white — is too generally known and admired to require many remarks in this place except that it is a biennial perfectly hardy, and complaisant enough to grow in almost any soil.

C. betonicæfolia, also hardy, flower of a purplish tint with a pale base; the foliage pleasing, and rather singular.

C. sarmatica — a beautiful variety, hardy, the bell shaped flowers droop elegantly.

C. punctata—à native of Siberia, consequently hardy, flower large, dull white, hairy and spotted inside with crimson spots; this is very beautiful to examine, but as it grows near the ground and the color is not brilliant, it does not make a great show.

C. speciosa; shewy bell flower—flowers disposed in a pyramidal raceme, each about an inch long, dark purple, probably hardy here.

C. glomerata — flowers disposed in thick heads, bluish violet; there is one variety, C. glomerata, var. speciosa, of which the flowers are very large and striking; this is a great favorite.

C. rapunculoides — flowers pendent in thick, elegant pyramidal spikes, hardy, very ornamental, will grow in any soil, and lasts the whole summer and autumn; these are sometimes double; but in either state, are great acquisitions in forming the bouquet.

C. persicæfolia; peach-leaved Campanula — flower as before described, large, open; the foliage narrow; plant rather slender, of an upright growth; hardy; both blue and white — the blue generally rather pale, the white pure and brilliant; this is often double, but as the inner leaves are mostly irregularly formed and not symmetrical, the change appears to me to decrease its beauty: it is however generally thought very ornamental.

C. urticæfolia; the nettle-leaved Campanula. There cannot

well be a greater contrast than this and the last described, yet both are beautiful and shewy. This has a broad foliage as the name well describes, the bell pure white, pendent, deep, the segments pointed and elegant — also double sometimes, but it is more symmetrical, like one bell fitted into another. This plant grows very neatly, the stems rising from a bed of fine green foliage.

C. Loreyi; Lorey's campanula—annual, a very handsome species, of a slender habit; large, brilliant deep purple or white flowers with a purplish tinge, much expanded. This being of a dwarfish growth, would be, like C. speculum, admirably adapted for the border of the flower bed. I believe this has not yet been grown here, but is well worthy the honor. The seed has been imported according to the seedsmen's lists, and we may therefore expect to see it in the Exhibition of the Horticultural Society this year.

C. trachelium and C. latifolia are very shewy, the stems many flowered and quite hardy.

C. erinus — an elegant little annual growing near the ground.

C. pumila; dwarf Campanula — white and blue; exceedingly ornamental, particularly for rock-work, its elegant small bells literally covering the ground.

C. speculum now specularia speculum; according to De Candolle the well known Venus' looking glass—a pretty dwarf annual, which has long retained its rank for beauty amongst the flowers of the garden, and is to be had at every seed store.

There are about five species indigenous in the United States, but probably only three hardy enough for the northern sections.

C. aparinoides, C. rotundifolia, and C. flexuosa — these, though by no means devoid of beauty, would perhaps not be admitted into the garden; yet are admirably adapted to adorn some wild nook or dell, whose owner might find delight in collecting together the most shewy plants of his native country.

Including those which used to be called Campanula, but are known as Wahlenbergia, Specularia, Platycodon, &c. &c., there are about two hundred and fifty varieties enumerated, besides several lately imported whose names have escaped my memory, which are extremely fine. Many are of course at present unattainable, and others not sufficiently hardy to bear this climate; but I think a garden without several of this tribe is very deficient in one of the most cheerful and lively of Flora's treasures.

## ART II .- On forcing Roses, &c. By J. R. WILLIS.

I pot the plants the latter part of August in the compost and same sized pots I recommended in Vol. ii, page 3 of this work. Having but one plant stove, which is about 40 feet long by 15 feet wide, I take a common cucumber frame, putting some rotten tan into it, in which I plunge the pots, (but I should have named, that before I put them into the frame, they are pruned back to two or three eyes,) I then put a strong lining of hot dung, as recommended by Mr Wood, in Vol. ii; and put on the lights directly, having some very thick reed mats made for the purpose, I cover the lights with them; they remain covered in this manner about a fortnight when the buds will all have broken. I take the mats off and let them have all the light I can so as to bring them to their color. which they will attain in a few days. I then remove them to the coldest end of the plant stove, which I keep now at 75 or 80 degrees; I keep them to this situation about a week, when I remove them on a trellis to the front of the house, towards the end where the heat first enters, where I keep them moderately moist at the roots, and occasionally syringe the tops. It is almost needless to add, that the time for putting them into the frame can only be governed by the time they are required to be in bloom, which I find to be about six or seven weeks from the time of putting them in the frame. In answer to the question, "Whether it is possible to have fine forced Roses late in December and January?" I reply, that I have forced them so as to have them in bloom at Christmas, but the flowers were never so fine, neither do I find them to bloom so freely as those which come in flower in February and March; in fact I have had them in February and March little inferior to those in the open air. With respect to whether "They will bear removing to a conservatory after the blossoms are produced, &c.?" [ answer, they will remain in flower much longer than if kept in the stove, but I find that the buds that were just formed when they were taken from the stove will turn yellow and drop off; they are not so liable to fall when kept in a warm room in the house; I have had them in the house for more than a week, and then removed them back to the plant stove, and opened the buds already formed, but they certainly feel a check, as they were not so fine as

the first. In answer to the question concerning "Moss and Province Roses?" They both force remarkably well with me, and produce a great number of flowers; the only difference I show them in treatment from the others, is, they are syringed rather oftener than the other sorts. The Roses I principally force, are those here named, they may not be considered the best by some, as I am aware that the different growers have their fancy sorts for the purpose of Moss crimson, Moss scarlet, Province, Crimson perpetual, Gloire de jardens, Lee's perpetual blush, Yorkshire province, Indica Ochroleuca Noisette, Smith's New Yellow Noisette, Charles 10th-These are the sorts I most admire for the purpose of forcing, not forgetting the one recommended by Mr. Wood, viz., Rose du Roi. With regard to "The height the Dog Rose stock should be, to show the flowers to advantage?" I should say, in answer, that the height in some measure depends on a person's own fancy, but, however, my opinion is, the dwarfer it is the better.

The Persian Lilac should be taken up or repotted as soon as the leaves are off, and potted in a sandy loam, in pots sufficiently large to contain their roots when potted; put them in some convenient and sheltered place, until the latter part of January, then put them in the stove, and keep them moderately moist. Hydrangea hortensis may be forced just in the same manner.

The greatest beauties we can add to a conservatory in spring, are, in my opinion, Rhododendrons, Azaleas, and Kalmias. Those I force are Rhododendon ponticum, Do. Smithii, Do. Cunninghamii, Do. arboreum, Do. Catawbience. Kalmia latifolia. Azalea Indica alba, Do. phænicea, Do. Smithii, Do. pink, Do. blush, Do. white, Do yellow. These should be carefully taken up with good balls, disturbing the roots as little as possible, and put them in pots large enough to contain the balls. The time I pot them is in November — I do not recommend their being brought into the forcing-house until after Christmas, when they will begin to push directly; the only treatment I use, is keeping them moist and syringing the buds. — Floricultural Cabinet.

Dec. 6th, 1836.

# ART. III .- Impregnation of Plants.

The January number of Professor Silliman's Journal — a work which deserves the support of all interested in the higher departments of the Natural Sciences — in addition to a great variety of other valuable papers, contains one by Dr Gray, of New York, being in part a translation of the celebrated Corda's researches on the impregnation of plants. As the subject is one of interest, we have thought that a condensation of the paper, adapted to the general reader, might prove acceptable to at least some of the readers of the Farmer.

"Omne ex ovo, or everything from an egg," was the exclamation of an old philosopher, in regard to the animal creation, and later investigations show that it is scarcely less applicable to the vegetable one. The fertilizing properties of the farina or pollen of plants has long been known, but the manner in which this effect was performed, as was to be expected where the operation was conducted in the silence and mystery of nature, led to a great variety of speculations. Every farmer knew that the yellow dust which fell in such quantities from the corn blossoms upon the silken tassels of the ear was necessary to the formation of the kernel, but few were able to explain the cause of this necessity or the mode in which the plant was rendered fruitful. Every housewife has, during the summer months, seen her reservoirs or cisterns of rain water covered with a yellow powder, which by most is considered sulphur, as it appears most plentifully during thunder gusts accompanied by high winds. The peculiar odor which belongs to this substance when burning. may have assisted in originating the error with regard to the origin of this dust, which is the pollen of the forest trees, as any one may be convinced by walking in the woods when this fecundating dust is falling. This dust may be easily seen and collected for observationon the blossoms of the different varieties of the melon, pumpkin, and cucumber.

Pollen, when examined by a moderate magnifying power, is seen to consist of a multitude of grains of some regular form which is uniform in the same species, but often widely different in different kinds of plants. These grains are composed of two coats, of which the exterior is thick and nearly elastic, while the inner is exceedingly delicate and highly extensible. The cavity is filled with a

fluid which, under a powerful lens, appears slightly turbid, on account of a vast number of minute granules which float in it. A magnifying power of three hundred reveals the existence of two kinds of granules in the fluid of the pollen grains. The first is large and few in number, and are from the 4000th to the 5000th of an inch in diameter. The smaller particles, or molecules, as they are termed by Brown, who here seems to have led the way in the discovery, are from the 15,000th to the 30,000th of an inch in diameter. The microscope shows a motion of these particles in the fluid, movements not confined to a mere change of place, but a change of form in the particle itself; and Brown asserts that he was "convinced from repeated observations that they are produced neither by evaporation nor currents in the fluid, but that they pertain to the particles themselves."

But whatever may be the nature of this fluid or the granules it contains, it is evident that to the pollen the power of impregnation belongs, and three hypotheses have been advanced to account for its agency in the production of the vegetable embryo. According to one view, a germ furnished by the pollen is supposed to be deposited in and nourished by the ovule; according to another, the germ is thought to be originally formed in the ovule itself, and is merely excited to action by an influence derived from the pollen; while according to the third the embryo is conceived to result from the union of a germ furnished by the pollen with another produced by the ovule. Recent discoveries have rendered it probable that the first supposition, though attended with some difficulties will be found nearest the truth.

It was discovered by Needham that grains of pollen, moistened or thrown upon water, burst with violence, and discharge the slightly viscous and turbid fluid contained in them. This effect was also sometimes produced when the pollen fell on the moist surface of the stigma, and hence to this fluid the immediate agency in impregnation was attributed by Linnæus and contemporary botanists, they in general supposing that the fluid was directly conveyed down the style to the ovule where the fecundating power was exerted. Whatever speculations might have been on the subject, the actual knowledge of naturalists was confined to the simple fact, that the application of the pollen to the stigma was essential to the fertilization of the ovule, all the information gained respecting the action of the pollen after it has reached the stigma being of recent date.

The very great improvements made in the microscope within the last twenty or thirty years had prepared the way for further advances in science, and the career of discovery in the impregnation of plants was opened in 1823 by Prof. Amici of Italy. In examining some grains of pollen on the stigma of the Portulacca oleracea, or common purslain, he observed that the grains had projected from some part of their surface an extremely slender tube, which was found to consist of the inner lining of the pollen-grain protruded through the external coat. Amici published the result of his discoveries, which immediately attracted the notice of Brougniart and Brown, the first of whom published a memoir in 1827, to which we are indebted for the earliest and most complete account of the manner in which these tubes originate and act upon the stigma. When grains of pollen fall on the stigma, they are retained either by the hairs with which this organ is often provided, or by its slightly humid and viscous surface. This moisture they slowly absorb, and after an interval varying from an hour to a day or more, the outer coat opens by one or more coats or slits, through which the highly extensible inner membrane protrudes like a hernial sac, and is slowly prolonged into a delicate tube. These tubes are so extremely attenuated that a powerful microscope is required for their examination.

The grains of pollen produced by some plants, (particularly the family of the Cucurbitacae,) are known to protrude several tubes from different points, and Amici detected as many as twenty or thirty from a single grain. One of the most singular facts shown by the investigations of Brown was, that the stigma of one plant would excite the same action in the pollen of different species, and even of plants belonging to different families. Thus Dr. Brown applied the pollen of a species of Asclepias to the stigma of an Orchideous plant, and found these tubes produced as readily as when placed in contact with the stigma of the plant from which the pollen was taken. Here was a clue to the manner in which hybrids were formed; and a plausible reason shown why the seeds of such plants when grown, did not resemble the fruit from which they were taken, but showed a disposition to revert more or less to their original type, according to a fundamental law of nature.

The tubes thus produced from the pollen when placed in contact with the stigma, penetrated its substance, not however by means of

any particular channel, but by insinuating themselves between the cellules, and along the intercellular passages which abound in the tissue of the stigma and style. M. Brougniart was able to follow them for only a moderate distance into the tissue of the style, where he imagined the tubes terminated, and opening at the extremity, discharged the fluid and floating particles of the pollen grain. Dr. Brown was more successful in tracing their course. He followed the course of the pollen tubes in several plants of Orchidea and Asclepiadea from the stigma to the placenta, and in a single instance, in an Orchideous plant, traced some vessels or tubes of an equivocal nature quite into the aperture of the ovule. Dr. Brown published an account of these discoveries in 1831, and remarks that Mr. Elliott in his Botany of South Carolina and Georgia, had observed these cords or fibres in the Ascelpias, but it is probable their origin or office was not suspected.

Such was the state of knowledge respecting the impregnation of plants, when M. Corda, a member of the Imperial Academy, commenced his observations. Dr. Brown had traced the pollen tubes to the mouth of the ovules, and M. Corda devoted himself to determine the interesting inquiry as to their farther progress and termination. As subjects of examination he selected the Coniferae or Fir tribe, in which the ovules are naked, and impregnated by immediate contact with the pollen, consequently offering great facilities for the investigation. Aided by powerful instruments, and conducting the processes with great skill and perseverance, M. Corda was able at last to trace the pollen tubes into the ovule itself, where the fluid of the pollen gave the first impulse to the formation and development of the embryo. The following is the summary of the discoveries made by M. Corda, translated from his memoir by Dr. Gray, and which in the Coniferae establish these positions:—

- "1. The pollen tube penetrates into the micropyle, (exostome,) and in Pinus the pollen grains fall directly into it; whence the impregnation is immediate.
- 2. The pollen tube passes through the exostome into the endostome, passes through the cavity of the secundine, and arrives at
- 3. The nucule or ovule; extends through the endostome into its cavity, and
- 4. By the injection of the fluid contained in the pollen grains into the bottom of the nucule gives the first keim (germ) to the formation of the embryo.

- 5. The formation and development of the embryo changes the contents of the cellular tissue of the nucule, which becomes fluid, and appears to furnish materials for the growth of the embryo.
- 6. The pollen tubes remain fixed (to the embryo sac) sometimes after impregnation and the commencement of the development of the embryo in the latter."

The translation of the memoir in the Journal, is accompanied by a series of engravings representing the process of impregnation, from the formation of the pollen tubes, to their entrance into the ovule and the discharge of their contents, embracing the first rudiments of the embryo.—Genessee Farmer.

## ART. IV.—List of New and Rare Plants. Noticed since our last. From Foreign Works.

- 1. Banksia occidentalis, West Coast Banksia. Natural Order, Proteacea: Class, Petrandria; Order, Monogynia. A very neat and handsome species of this very singular tribe of plants. Both foliage and flowers are pretty; the latter are of a dark red color. Banksia, in honor of Sir Joseph Banks.
- 2. Brassavola cordata, Heart-lipped. Orchidacea; Gynandria; Monandria. There is nothing very striking in the flower of this species of Epiphyte. The petals are of a greenish-yellow color, very narrow, and about one inch long; the labellum is half an inch long, and the same breadth, heart-shaped white. The plant is a native of Brazil, and was imported from thence by Messrs Loddiges, in whose collection it has bloomed this year. The species is very nearly allied to B. nodosa; the flowers are only half the size of that species, and having a heart-shaped labellum. Brassavola, in compliment to A. M. Brassoval, an Italian Botanist.
- 3. Broughtonia coccinea, Crimson-Flowered. Orchidaceæ; Gynandria; Monandria. Synonyms, Dendrobium sanguineum; Epidendrum sanguineum; and Broughtonia sanguinea. The flowers of this species of orchideous plants, are said to be, by Dr Hooker, the richest colored of any of this splendid family of plants. It is but rare in the collections in this country, though introduced from Jamaica, to Kew Gardens, 1793. The plant usually blooms from May to July. The

flower stem rises about ten inches high, bearing a raceme of from six to ten, very rich crimson colored flowers, continuing in bloom along time. Each flower is upwards of an inch across. It is a very desirable species, and well deserves a place in every collection. Broughtonia, in compliment to A. Broughton, a Botanical author.

- 4. Catleya intermedia, var. pallida, Pale-flowered. Orchidaceæ; Gynandria; Monandria. This species has bloomed in the collection of the London Horticultural Society. It is a native of Brazil. Mr Tweedie remarks of it, "This is by far the handsomest of the tribe found in the neighborhood of Buenos Ayres, and grows equally well on the sea-beaten rock, and the moss covered tree in the heart of the forest, and is to be found in bloom at all seasons. are many varieties of it: their color pink and crimson." The present variety is very beautiful. Each flower is about three inches across. The sepals and petals are of a pinkish white color. labellum is three lobed, the centre one feathery at the summit, and terminating with large stripes and spots of a deep crimson, finely margined with white. The following fine species have been described by Dr Lindley: - Catleya bicolor, a native of Brazil: sepals and petals of a tawny color; the labellum is of a bright purple and white. C. coccinea, native of Brazil, a very beautiful flowering spe-The flowers are about three inches across, of a bright scarlet color. The flower stems rise about three inches high. This latter circumstance, connected with its brilliant colored blossoms, renders it a most striking and very desirable species. C. Harrisonia, a native of Brazil, producing from one to four flowers on a raceme. C. maratima, a native of Buenos Ayres, producing three flowers on a raceme, of a fine rose color. C. ovata, a native of Brazil, very much resembling C. labiata. Messrs. Loddiges possess a fragrant species with crimson flowers, which was discovered by Mr Schomburgh, in British Guiana.
- 5. Cratægus glandulosa, var. macracantha, Long spined glandular Hawthorn. Rosaceæ; Icosandria; Pentagnia. Synonyms, C. glandulosa: C. macracantha. A very fine variety of American Hawthorn, of a vigorous habit, producing a profusion of deep vermilion red berries, in clusters, and which make a very showy appearance. The foliage is of a dark green. The spines are from three to four inches long.
  - 6. Drosera filiformis, Narrow-leaved Sun-dew. Droseroceæ;

Pentandria; Pentagynia; Synonym, D. tenuifolia. A native of New Jersey, where it was discovered by Mr Macnab, and by him introduced to the Edinburgh Botanic Garden. It has bloomed in the Comely Bank Nursery, and in the stove at Dr Reill's. The flower stalk rises eight or ten inches high, producing a raceme of ten or twelve flowers, rose colored, each flower about half an inch across. *Drosera*, from *drosos*, dew; referring to the clear fluid which exudes from the foliage, and appears as if covered with dew.

- 7. Eutoca Wrangelina; Baron Wrangel's Eutoca. Hydrophylleæ; Pentandria; Monogynia. This pretty flowering annual is a native of New California, and has very recently been introduced into this country. It has bloomed this summer, in the garden of A. B. Lambert, Esq. Boyton House, Wiltshire. The plant is of ready culture, growing freely in the open border, and blooming for several months, and has a peculiarly neat appearance. The cymose heads of pale-blue blossoms being showy; each blossom is about half an inch across. Eutoca, in compliment to Baron Wrangel, a Swedish Nobleman.
- 8. Genista monosperma, Single-seeded. Leguminosæ; Diadelphia; Decandria; Synonyms, Genista monosperma; Spartium monospermum. It grows wild in Sicily, Barbary, Greece, at Gibraltar close to the sea-beaten rocks, where, in February, it blooms in vast profusion. It is said to be one of the most deliciously fragrant blossomed shrubs yet discovered. The flowers are white. Genista, from genu, the knee; branches being flexible like the knee-joint.
- 9. Isopagon Baxteri, Mr Baxter's. Proteaceæ; Tetrandria; Monogynia. A native of New Holland, from whence it was sent to the Edinburgh Botanic Garden, in 1830; it has bloomed in the greenhouse at that place. The foliage is very handsome, much resembling Grevillia acanthifolia. The heads of flowers are rose-colored, with darkish tips. The plant usually grows about two feet high. It is a pretty greenhouse shrub.
- 10. Malva Munroana, Mr Munroe's Mallow. Malvaceæ; Monadelphia; Polyandria. It was introduced into this country by the late Mr Douglas, who discovered it growing on the barren plains of the Columbia, in North-West America. It will bloom freely when grown in the open air in this country, and a warm and sheltered situation be selected for it; it will then bloom from July to October. If cultivated in the greenhouse, it blooms from May. Each flower is near an inch across, of a pale rose color.

- 11. Nectaroscordum siculum, Sicilian Honey-Garlic. Liliaceæ; Hexandria; Monogynia; Synonym, Allium siculum. A hardy bulbous plant, discovered in the shady woods of Sicily; nearly thirty flowers are produced in each umbel; they are of a brown, purple, rose, and white intermixed, each flower is more than half an inch across; it is more interesting than showy. Nectaroscordum, from nectar, honey; and skordon, garlic.
- 12. Ornithogalum conicum. Pure-white flowered Star of Bethlehem. Asphodeleæ; Hexandria; Monogynia. A native of the Cape of Good Hope, from whence, Baron Ludwig sent bulbs to the Glasgow Botanic Garden, in 1835; the same year it bloomed in the greenhouse. The flower scape rises about one foot high, terminated by a raceme of flowers, at first conical, afterwards more elongated. The flowers are of a pure white, each near two inches across, making a showy appearance. Ornithogalum, from ornis, a bird; and gala, milk. The plant producing much when bruised.
- 13. Phlomis Armeniaca. Armenian Jerusalem Sage. Labiatæ; Didynamia; Angiospermia. A hardy herbaceous perennial plant, with flower stems rising about a foot high, producing numerous fine yellow blossoms, which have a neat and elegant appearance, being large showy. The plant was introduced into this country in 1834, from Armenia, where it was found growing on dry stony hills. It well deserves a place in the flower garden. It is grown in the Chelsea Botanic Garden. Phlomis, from Phlogmos, a flame; the down used for candle wicks.
- 14. Prescottia colorans, Purplish Prescottia. Orchidaceæ; Gynandria; Monandria. A stove herbaceous orchideous plant from Brazil, and imported by Messrs Loddiges. The flowers are produced in a dense manner, upon a spike of six or eight inches high, something in the way of the common Plantain—they are of a yellowish green. Prescottia, in compliment to John Prescott, Esq of St. Petersburgh, a celebrated Botanist.
- 15. Ratibida columnaris, var. pulcherrima, Painted-rayed. Compositæ; Syngenesia; Polygamia Frustranea; Synonyms, R. sulcata; Rudbeckia columnaris; R. Tagetes. The late Mr Drummond discovered this hardy perennial plant growing in Texas, from whence he sent seeds into this country. It is found frequently growing on the margins of rivers throughout the western regions of North America. The present showy variety has been raised by Mr Miller

of the Bristol Nursery. The flower stems rise from two to three feet high, each crowned with a splendid flower three inches across. The disk of the flower has a large portion of a fine velvety crimson and brown color; the exterior part of a fine yellow. Altogether it is a very splendid flowering, and deserves a place in every flower garden.

- 16. Sisyrinchium graminifolium, var. pumilum, Dwarf grassleaved. Iridaceæ; Monadelphia; Triandria. This very neat and beautiful flowering plant was discovered on the mountains near Valparaiso and Conception; a plant of it has been sent to Robert Mangles, Esq. Whitmore Lodge, Summing Hill, Berkshire; in the very select collection of that gentleman it bloomed in May, 1836. The flower stems rise near six inches high, producing a profusion of flowers, each of which is near an inch across, of a pretty yellow, with a deep purple spot at the base of each petal. The plant requires protection during winter in a cool frame or greenhouse. Sisyrinchium, from Sesurigchion; an old Greek name for the Iris Sisyrinchium.
- 17. Stackhousia monogynia, Pink-tipped. Stockhousiaceæ Pentandria; Monogynia. A half hardy perennial herbaceous plant, a native of New Zealand, from whence it was sent by Mr James Backhouse to the York Nursery. The flowers are produced in a dense spike. The petals are very narrow. Each flower is nearly half an inch across. The tips of the spikes are of a bright pink, but when the blossoms expand they are pure white. Stackhousia, in honor of the late John Stackhouse, Esq. F. L. S., of Pendarvis, in Cornwall.
- 18. Verbena Lambertia, var. Rosea. Drummond's Pink Flowered Vervain. Verbenaceæ; Didynamia; Angiospermia. This very pretty flowering variety was discovered by the late Mr Drummond, in Texas, and is cultivated in this country under the name of V. Drummondi; the plant appears to be only a variety of V. Lamberti. The flower stem rises to half a yard high, terminating in a spike, from three to six inches long, of fragrant flowers, which are pale rose colored. When grown vigorously, it is a very handsome variety. It delights in a freshloamy soil, well enriched with manure or leaf mould. The plant is quite hardy and easily increased by slips. It may be obtained at most of the principal Nursery Establishments.

#### ART. V .- Leersia oryzoides.

LEERSIA oryzoides. Rough Leersia. Synon. Sandly's grass. Triandiæ Trigynia. Graminæ. This is a perennial grass, which according to Loudon, grows two feet high, and to the culture of which, much attention has of late been paid in South Carolina. Through the politeness of Dr S. Blanding, of Columbia, S. C. we have been furnished with a small quantity of seed, which we shall distribute with pleasure to our friends and patrons, who are disposed to test its qualities in our climate. Dr Blanding has furnished us with the following account of its culture.

"The seed of the Leersia oryzoides has been brought into cultivation by Mr Richard Sandly of this place. He says, the first year it has to be cultivated in drills, or it will be overrun by other grasses, but after that it will take care of itself, and he cuts three crops in a season from it. The soil which suits it, is a moist or wet one which cannot be brought into ordinary tillage. The hay from it is fine for stock, and sells in this market readily, at a good price. Your friends in the country will soon test its value. I have not seen it growing, as Mr Sandly's plantation is forty miles from Columbia."

We take this opportunity to give a brief account of the method recommended by one of the first economists in Europe for raising rare grasses. In a quarter of the garden a spot should be selected in such a situation, that it will not be exposed to mix with other kinds of grass, flowering at the same time. A bed four feet wide should be prepared by digging and manuring, in which four drills should be made lengthways of the bed; in these, the seeds should be sown. The young plants should be kept free from weeds, and the seed collected when ripened. This also gives a fair chance for observing the qualities and peculiarities of the grass.

J. B.

#### ART. VI. -On Myrtles. From an OLD AUTHOR.

Mons. Liger describes the Myrtle as follows: It is a shrub, that from its roots shoots forth little branches, garnished with small, green, soft, shining and pointed leaves, among which grow flowers

called *Pentapelous*, or consisting of five leaves, white, odoriferous, and in the form of a Rose. These are supported by an indented cup, which grows to be a berry as big as an olive, with a crown on the top, divided into several cells full of seeds, shaped like little kidneys.

Mr Mortimer distinguishes them into the Broad-leaved Myrtle, and the Narrow-leaved Myrtle, which are both very odoriferous shrubs; but he esteems that which affords plenty of double white blossoms in autumn, as the best: And also a sort of Myrtle with a large leaf, called the Spanish Myrtle, which will endure all weathers without shelter; and another sort of Myrtle that comes from Carolina and Virginia, which is the hardiest of them all; the berries of which being boiled, yield a substance of a green color, sweet or pinguid, which they there scum off, and make candles with, which do not only give a clear light, but a very agreeable scent. These will all endure hard winters with a very slender defence.

Mr Bradley distinguishes Myrtles as follows: the Large-leaved Myrtles, which are, the Nutmeg Myrtle, the Nutmeg Myrtle with variegated leaves, and that with the double blossom, the Orange-leaved Myrtle, the Portugal Myrtle, and the Spanish broad-leaved Myrtle.

The Smaller-leaved Myrtles, he distinguishes into the Bird's-nest Myrtle, the Box-leaved Myrtle, the Rosemary-leaved Myrtle, the Silver-leaved Myrtle, the Thyme-leaved Myrtle, and the Upright Myrtle.

All these, he says, are with ease propagated by cuttings, except the Orange-leaved Myrtle, and that with the double blossom, which are much better increased from layers.

The best time for laying Myrtles, he says, is in May, (but Mons. Liger says in March) which layers should be only the youngest shoots; (Mons. Liger says, the straightest branches, and those whose rind is smoothest) which, after the earth has been well stirred, must be bent into the earth, and often watered, and they will strike root, and be fit to take off from the mother plant the spring following: but Mons. Liger says, the September following.

Mr Bradley says, if you lay down shoots of a year old, they will never take root, with all the art that can be used.

As for multiplying them by cuttings, he advises also, that they be young and tender, taken from the Myrtles in July: That the leaves

must be stripped off two inches from each cutting, and set in pots of fine light earth, two inches deep, and an inch one from another, and frequently watered till they have taken root, which will be about the latter end end of August. Thus they ought to remain till the second March before they are transplanted into single pots.

Mons. Liger says, that in order to multiply them by slips cut from the roots, you must lay open the root of the Myrtle from whence you design to take a branch; cut it off as close as you can, that there may be the more little roots about it. That this is to be done either spring or fall; that the earth they are planted in, should be two thirds kitchen-garden soil well sifted, and one third hot bed mould.

Mr Mortimer says, Myrtles produced from layers are the most hardy; and those from seeds most tender: but neither he, nor Mr Bradley, nor Mons. Liger gives directions for multiplying them by seed.

He says, that as to the Carolina or Virginian Myrtle, it thrives best near the sea, and is raised either of seeds or layers. He advises in planting them, that they be not too close together, nor in too moist a place; for that these will cause them to grow mouldy. That they should be transplanted in the spring of the year, that they may have time to get root in summer, that the tree may be supplied with sap sufficient to nourish it in winter.

All agree, that they should be well-watered. Mr Bradley says, when they have once got large roots, they delight in water, and should be frequently refreshed with it. Mons. Liger says, they must be frequently watered in the summer, because the humidities rectified by the heat of the sun, help layers to take root the sooner. And Mr Mortimer says, Myrtles must be well watered summer and winter, or else they will not take root well.

Mr Bradley says, the Myrtle delights so much in moisture, that he has known a pot of it set in a shallow bason of water, on the inside of a window exposed to the South, that has shot above four times as much in one summer, as any that have stood abroad; and has continued growing at that great rate for several years, without renewing the earth in the pot, by only supplying the bason with fresh water as it wanted; but the shoots of this plant were very tender.

Mons. Liger advises to plant them in a place where the sun can

come at them, and to water them often: and says, you may know when they want it by the fading of the leaves.

Mr Bradley says, in disposing of Myrtles, or any other plants in the shade, you must do it so, that no other trees drop upon them, nor must they be confined in too close a place, but have a free air both round about them and above them, or else the shoots they make will be very slender and weak.

Mons. Liger says, Myrtles naturally require the use of the shears, and are to be clipt by art; and if by any accident any of the branches happen to wither, they are to be cut off to the quick.

Mr Bradley directs, that about the middle of April, such old trees as have been neglected and have thin heads, should be pruned about the roots, and have fresh earth put to them; and that the branches of their heads should be cut within three or four inches of the stem, and should be pruned about the roots; and that by this ordering, they will prepare to shoot by that time they come abroad; and if they have water and shade enough, will make handsome plants that summer.

Mr Bradley informs us, that Mr Whitmil shewed him some Myrtles that were inarched one upon another, and had taken very well; among these, they were the Striped Myrtle upon the plain; the Nutmeg Myrtle upon the upright; the Large-leaved kinds upon the small; and the Double-blossomed upon several sorts; which brought to his mind some thoughts he once had of making a pyramid of Myrtles, the base of which should be garnished with the Spanish Broad-leaved Myrtle, to be followed with the Nutmeg; and next to that the Silver-edged Myrtle, and upon that the Upright sort, to be succeeded by the Rosemary and Thyme-leaved kinds, upon which there might be a ball of the Double-blossomed Myrtle, which would make a fine appearance.

At Sir Nicholas Carew's, at Bedington, is a Myrtle of the Spanish Broad-leaved kind, which is above eighteen feet high, and spreads about fortyfive feet. Mr Bradley says, if to this are joined those Myrtles that he has seen growing in Devonshire, in the natural ground, he cannot see any occasion for any great use of fire for these sort of plants, as is common in greenhouses; but plants that are in pots are much more liable to suffer by the frost, than if they were in the naked ground; and the more woody the plants are, the more hardy they are.

#### ART. VII. - Perpetual Roses.

THE following inquiries and remarks, from a lady in Portland, we cheerfully insert in the Register, hoping that her example will be followed by many others, who desire information respecting any plants, or their culture and management, promising in every case, to do what we can, to give light upon the subject desired. It would be pleasing to make the Register more social in its character than it has been heretofore; but this cannot be done, unless its patrons will bring their thoughts together, and let them mingle on its pages.

"PORTLAND, April 24th, 1837.

"Mr Breck — Can you give any information respecting Perpetual Roses? Are they hardy? Have you any to dispose of? Are they the same as the Monthly Chinese Rose? We think they are not. If you were to answer these questions in the Register, many would be gratified, as we are quite ignorant touching their peculiar characteristics. I was amused at an article in the last Register, where a gentleman speaks of 'my caterpillars.' I should be rejoiced if he would call them all home, for they have troubled my garden for three years, and nearly destroyed the bushes.

"The love of flowers is rapidly increasing in this good city, as any one may perceive when passing along the streets. Even in the most unpromising situations, you often find a fine rose bush, or a few geraniums cherished by the family of the wealthy for their beauty, or occupying a sunny spot at the one small window of the poor.

"Among many small collections, we find one deserving particular notice. The plants are principally geraniums, and stand unrivalled for their profusion of flowers. Among them is a Washingtonian, which no doubt would command a premium at any exhibition, being a magnificent plant of great size, completely covered with its numerous clusters of splendid flowers. Many others are distinguished for their graceful forms, combined with delicate flowers, forming an assemblage of beauty which well repays the unremitting attention bestowed upon them by Mrs——, a passionate lover of flowers. The successful efforts of this lady florist, will, I hope, lead many to devote their leisure hours to so pleasing a pursuit, and

thus cheat the winter of its dreariness. Many are deterred from indulging their taste through fear of expense, supposing a green-house indispensable: but here we see how much may be done with no additional expense; the plants forming the ornaments of the family drawing room, being familiar members of the household, breathing the same air, warmed by the same fire, and cheered by the same sun, richly repaying by their sweetness and beauty, all the care and affection bestowed upon them."

Remarks.—As to the Perpetual Rose, we would remark, that it has of late gained much celebrity, and many fine varieties have been produced; more than thirty of which are enumerated in a recent English catalogue. One of the most noted is Lee's Crimson Perpetual, considered very magnificent, and flowers in profusion from June to October. It is esteemed the finest of all garden roses; its fragrance is exquisite, and the plant highly valued.

The different species of the Rose have been so mixed by crossing or hybridizing, that it is rather difficult in many cases, to trace their origin with certainty, and we do not feel positive to what section the variety in question belongs. That it is not a China Rose is very certain, but we have reason to believe that they may be arranged under the centifoliæ and gallicæ, and that they are the offspring of some of the varieties of these two sections of the rose, which have been impregnated with pollen from some of the varieties of spinosissima, or the Scotch Rose.

As the parents of this variety are hardy, we should suppose, of course, that their offspring were the same; but, as it is frequently grown very luxuriantly by high cultivation, to produce the desired effect, it becomes a little subject to winter-kill without some protection. We are not positive, but believe our friends Winship and Kenrick can furnish plants of this desirable Rose.

The following remarks are from an English work: "They are, perhaps the most desirable of all the pleasing families of Rosa. Like their prototypes, they are highly fragrant, and, if possible, more so in September, October and November, than in June. As every shoot in most of the varieties produces bloom, the soil cannot be too rich; for with these, luxuriant growth will be sure to give abundance of flowers. A good practice would be, to cut off all the bloom buds in June, and shorten the shoots to about half their length, then water them with manured water in July and August.

This will make them shoot and bloom most luxuriantly all the autumn."

We should be glad to receive, from any of our correspondents, remarks upon the above subject.

J. B.

ART VIII.—Observations on the Flower Garden. From Bridgman's Gardener's Assistant.

Previous to forming a flower garden, the ground should be made mellow and rich, by being well pulverized, manured, and prepared in every respect as if intended for a kitchen garden. A flower garden should be protected from cold cutting winds by close fences, or plantations of shrubs, forming a close compact hedge, which should be neatly trimmed every year. Generally speaking a flower garden should not be upon a large scale: the beds or borders should in no part of them be broader than the cultivator can reach, without treading on them: the shape and number of the beds must be determined by the size of the ground, and the taste of the person laying out the garden. Much of the beauty of a pleasure garden depends on the manner in which it is laid out: a great variety of figures may be indulged in for the flower beds: some choose oval or circular forms, others squares, triangles, hearts, diamonds, &c., intersected with winding gravel walks.

Neatness should be the prevailing characteristic of a flower garden, which should be so situated as to form an ornamental appendage to the house, and when circumstances will admit, placed before windows exposed to a southern or southeastern aspect. The principle on which it is laid out, ought to be that of exhibiting a variety of colors and forms so blended as to produce one beautiful whole. In a small flower garden, viewed from the windows of the house, this effect is best produced by beds or borders, formed on the side of each other, and parallel to the windows, from whence they are seen; as by that position, the colors show themselves to the best advantage. In a retired part of the garden, a rustic seat may be formed, over and around which honey-suckles, and other sweet and ornamental creepers and climbers, may be trained on trellises, so as to afford a pleasant retirement.

Although the greatest display is produced by a general flower garden, that is, by cultivating such a variety of sorts in one bed or border, as may insure a constant blooming; yet bulbous plants, while essential to the perfection of a flower garden, lose something of their peculiar beauty when not cultivated by themselves.

The extensive variety of bulbous roots, furnishes means for the formation of a garden, the beauty of which, arising from an intermixture of every variety of form and color, would well repay the trouble of cultivation, particularly as by a judicious selection and management, a succession of bloom may be kept up for some length of time. As, however, bulbous flowers lose their richest tints about the same time annuals begin to display their beauty, there can be no well founded objections to the latter, being transplanted into the bulbous beds with all the gaiety and splendor of the floral kingdom.

But the taste of the florist will be exercised to little purpose in his selection of flowers, if he does not pay strict attention to the general state of his garden. If there are lawns or grass walks, they should be frequently trimmed, and more frequently mowed and rolled, to prevent the grass from interfering with the flower-beds, and to give the whole a neat, regular, carpet-like appearance. If there are gravel walks, they should be frequently cleaned, replenished with fresh gravel, and rolled. Box, and other edgings, should be kept clear of weeds, and neatly trimmed every spring. Decayed plants should be removed, and replaced with vigorous ones from the nursery bed. Tall flowering plants must be supported by neat poles or rods; and all dead stalks and leaves from decayed flowers must be frequently removed.

In the summer season, all kinds of insects must be timely destroyed, and in evenings of warm days, the flowers will require watering.

"To raise your flowers, various arts combine,
Study these well, and fancy's flight decline;
If you would have a vivid, vigorous breed,
Of every kind, examine well the seed,
Learn to what elements your plants belong,
What is their constitution, weak or strong;
Be their physician, careful of their lives,
And see that every species daily thrives;
These love much air, these on much earth rely,
These without constant warmth, decay and die;
Supply the wants of each, and they will pay
For all your care through each succeeding day."

#### ART. IX .- Double Flowering Peach Budded upon the Rose.

WE have received from a correspondent in South Carolina, a beautiful dried specimen of a twig of the double flowering Peach, with a number of its splendid flowers, said to be a part of the offspring of a bud upon a rose stock. Can this be? Possibly our friend has been misinformed. Did he see the Peach growing upon the rose himself, or was he told so by the person who gave him the specimen?

We have heard of budding the rose upon the black currant, to make a black rose — of budding it upon the barberry to make a yellow rose, and many other modes, equally in opposition to the analogical laws of vegetable nature; but we do not believe a union in such cases possible.

Botanists have brought the peach and the rose into the same natural family, but we are of opinion that the relationship does not come so near as to make them unite and flourish, although it may be possible that they may, for a short time, appear to thrive; yet the scion or bud must soon perish. It is so with the pear budded or engrafted upon the apple. We have known a pear scion live through one season upon the apple stock. It is well known that the pear will flourish on the quince, or the thorn even, but then in these cases the affiinity is much more close. We should be glad to learn from our correspondent, whether he has seen the plant in question, and how long the union has existed; and it would undoubtedly give our readers much pleasure to receive any botanical or horticultural information from the section of the country in which he resides.

J. B.

### ART. X .- Culture of the Peach.

WILMINGTON, April 5th, 1837.

Gentlemen — I have cut the enclosed article from the Hamilton Intelligencer, and believing it highly important to the public, request its publication in your paper. I believe it is from the pen of Judge Milikin, of Butler county, Ohio.

He is a practising physician of age and much experience with regard to the subject on which he writes. I do not consider myself skilled in the science of horticulture, but from observation, have long known the existence of the facts, for which the writer gives us philosophical reasons in their support.

B. Hinkson.

Peach Trees.—I frequently hear complaints through the country, that it has become almost impossible to cultivate the Peach tree. It is likewise remarked, that the fruit does not possess the same rich flavor that it did some years ago. I believe it to be a fact from my own observation, that we have no longer the pleasure of eating that delicious fruit, with all the fine flavors that it possessed in former times. There must be some natural cause for this failure. The climate has not changed. The sun has not ceased to shine. Rains and snows descend as formerly. Why then does the Peach tree not live, flourish and fructuate?

I have frequently heard it remarked, that the Peach tree would only do well in newly settled countries, where there was nothing but it and uncultivated fruits. The observation is correct in part, that it only does well in newly cultivated lands; but why the orchardist and farmer have not examined, or have not chemically inquired into the cause of the death of the tree and failure of its fruit, I know not. The only subject to investigate in this inquiry, is the situation the soil is in when the peach tree is thrifty and bears well, and the mode and manner of keeping the soil with the same constituent properties. We see that it is necessary that the sun should shine on the tree and fruit in order to give that flavor which we so much admire. If the tree is in the shade, we find that there is an excess of acid in the Peach which renders it unpalatable - abounding with a watery fluid. It therefore becomes necessary, that at least a part of the day's sun should shine on the tree and its fruits, to concentrate the fluids. Further, we find that there is but one kind of soil that the peach tree will live in, for the ordinary length of time they will live in congenial soil, that has been under cultivation any number of years (say twenty or upwards,) and that is a reddish clay soil, which holds a goodly portion of iron in solution. This fall I ate finely flavored peaches from trees that were more than twenty years old. The trees had been planted and raised in the above described soil. In all new cultivated lands, we know that there is going on continually a decomposition of vegetable

matter, say from the leaves that have fallen from time immemorial, rotten timber, and the decaying of the root and stumps, &c. Our next inquiry will be, what effects are we to expect from this decomposition? One is, we know, that about old buildings and rubbish of all kinds, the earth is always saturated with saltpetre or nitre, held in solution (as both names are applied to the same article.) The earth being measurably saturated with nitre, the tree is favored with a nitrous dew; for nitrous acid will abound where nitre is held in solution. There must, also, be what chemists call the "Hydrogen Gas," for they say that it has an active part to perform in the decomposing of vegetable substances, together with other. gases. If it is a fact (and I believe no one will deny it,) that those gases are necessary to be in abundance, or that the atmosphere ought to be surcharged with them, for the preservation and active growth of the tree and its fruit more than for any other fruit tree, all we have to do to have our trees preserved to longevity, and have as rich, delicious fruit, as formerly, is to generate those gases which appear so essential. This may be done in the following manner: When we have trees planted in a grassy soil, we ought to denude the root of the tree by taking off the top soil for some distance around the tree (say one yard) so deep as to destroy the root of the grass; fill that vacancy with leaves, rotten logs, chips, or tanner's bark. The latter, I think, will answer, though I would prefer the chips, or rotten wood, to anything else, for they will not produce so much moisture as tan bark, and as the ground where grass grows is measurably deprived of its nitre, and is cold, the chips or rotten wood will generate nitre, warm the ground, destroy the gluten in the soil, and keep the earth from freezing, thereby preventing the trees being killed by the frosts of the hard winters. By doing this, you have the soil for your trees in nearly the same situation to nurture them, that the soil of new cleared land is in. When trees are young - recently planted, and no sward of grass around them, I am clearly of the opinion that the tan bark will answer all purposes; that by the time the tree grows to any size, the bark will be decomposed so as to furnish a sufficient quantity of nitre and gases to answer all purposes for the benefit of the trees. I would advise a renewal of the chips, wood or bark, as often as necessary, to keep the roots warm in the winter and to prevent the growth of grass, always putting it on over the preceding coat. I would also advise the

disuse of the pruning knife, after the transplanting of the trees. I would prefer letting them grow as nature directs, for whenever the bark is broken, a gum exudes from it, impoverishes its juices, and the tree then begins to decay. To prevent worms and other insects from getting about the roots of the trees, sprinkle sulphur around the body on the ground, and cover it with a small quantity of earth, to prevent the wind from blowing it away. This should be done in the month of April. The bodies of the trees may likewise be painted with sweet milk and sulphur, which will effectually destroy all insects that wound the bark. When caterpillars are troublesome to your fruit trees, take a panful of live coals, hold it under that part of the tree which they are upon, sprinkle sulphur or brimstone on the coals, and the fumes will entirely destroy them.

I have dropped a few hasty remarks — perhaps enough to induce some abler pen to do the subject justice.

AGRICOLA.

# ART. XI.—Observations Relating to the Planting, Management and Culture of Fruit Trees and Plants.

Having been frequently applied to by persons about to procure trees and plants from the Nursery, for instruction how to plant and manage them, and this happening often at a time when the pressure of business rendered it very inconvenient to give the information required; and as the success of planting trees depends much upon the treatment they receive after they leave the nursery till they have passed over the first summer,—I offer the following observations for the use of those who are about to plant, and have not had as much experience as myself:—

Seasons of Planting.—The delight peculiarly attached to spring in the conduct and management of our rural concerns, may seem naturally to have a strong influence in governing the mind of many, in making choice of the vernal season, it having become the season the most generally adopted for engaging in this interesting branch of improvement, while it is sufficiently evident, that the weight of experience will be found in favor of planting in the fall, especially in those parts of the country subject to severe droughts; as trees planted in autumn are less liable to suffer from this cause, than if planted in the spring.

When we consider how very short our spring is, we ought to plant our large trees and large shrubs in the fall, and open weather in winter; for the necessary vegetable and flower gardening, transplanting flowers, herbs, and other small articles, that would be in danger of being thrown out of ground, if transplanted in the fall by frost, will be as much as most people will be able to accomplish during our short spring. On this subject there is much truth in an assertion of that shrewd scientific writer, Wm. Cobbett, where I think he says in some of his writings, "a person in America would not think of there being any spring the winter being so soon succeeded by summer heat." Our autumns are mild and so pleasant as to be the admiration of European visitors, affording us the opportunity of planting from the 15th of October to hard frost, which seldom interrupts transplanting in this latitude before the 15th of December. But if other business should interrupt fall planting, large trees may very safely be planted in the spring from the 1st of March (sometimes earlier) to the 15th of April, and many small matters, and all the evergreen plants much later in the spring, it being much the best season to plant those last.

Arrival of the Trees at the place of their destination.— Immediately on the receipt of the trees from the nursery have the bundle carefully opened, and have a trench dug deep enough to receive the roots below the surface in a compact manner, with the bodies of the trees in a slanting position, then fill in some fine mould on and among the roots of the trees, and water them, both roots and mould, till all is very moist, and cover all up till preparations are made for planting, which ought to be done before the trees arrive—another excellent way to preserve trees is to plunge the bundles of trees, especially the roots, into water, where they will keep safely for a long time.

Method of Planting.—The holes for planting should be dug at least two and a half feet diameter, and about two spits or eighteen inches deep, casting around the lower spade full, and using only the top one for planting the trees, which, if insufficient, use the surrounding top soil, or other equally good or better, brought from elsewhere for the purpose; mixing any sort of manure when planting, is considered injurious, but may be usefully applied around the trees as a top dressing. Before planting, trim off the bruised parts of roots and trim the tops of trees freely, leaving them as light as possi-

ble, preserving merely the form of a head; shortening the branches, especially the leading shoot, is considered injurious.

Before the trees are set in the holes, shovel in some good mould, in order that the trees may not be planted more than two inches deeper than they stood in the nursery, and spread the roots of the trees equally around on the said mould; in filling up the hole, care should be taken to make the earth fine, in order that it may run in among the roots of the tree, which may be promoted by gently shaking the tree, as it is thrown in - water the roots well, then fill the hole up level with the surrounding ground, drive in a strong stake on the northwest side, and fasten the tree to it by a band of damp straw, passing it several times between and around the tree and stake, so as to keep it steady and prevent the wind from chafing it; in dry weather, during the first summer, the trees ought to be watered occasionally - once a week will be sufficient, if done plentifully, so as effectually to wet the whole space occupied by the roots; some half rotten litter spread around the tree during the summer, would be useful in preventing the rays of the sun and the wind from dissipating the moisture - but it should be removed in the fall, as it might be a harbor for mice during the winter, who would be apt to injure the trees by feeding on the bark and roots.

ROBT. SINCLAIR.

### ART. XII .- On the Culture of Asparagus. By A. Forsyth.

THERE is, perhaps, no article in the culture of which, more unnecessary forms are gone through than with this. We see the plant (a native of Britain) covered with 6 inches or perhaps 1 foot of soil or litter, in winter, to keep the frost from it or to mulch it when it is in a dormant state; though we may as well mulch a layer of seed potatoes at Michælmas, to benefit their buds for the succeeding summer.

But to come to the point, and that is, to cultivate asparagus to the highest state of perfection at the lowest charges. Let a heap of manure, equal to a layer of nine inches deep all over the ground intended for asparagus, be prepared of the following materials:—One third good loamy turf or turf of sandy peat; and two-thirds

of the best dung from the stable and cattle layers; with about two bushels of drill bones to every pole of ground. The turf ought to be pared off, and piled up, a year previous to its being wanted; and the dung properly mixed and fermented at least six weeks before. The bone manure may be spread over the rest before they are trenched into the quarter. In the process of trenching, let the manure be equally incorporated with every part. In planting, let one-year-old plants be inserted 1 in. below the level of the surface, in lines alternately 9 in. and 3 ft. apart, in the same way as peas are generally planted. If the plot be extensive, paths, 3 1-2 feet wide, may be run across the rows, at the distance of 16 ft. apart, to prevent wheeling, and, as much as possible, walking between the lines. The plants may be from 4 in. to 6 in. apart in the row, bedded and covered with leaf-soil, or dung reduced to a soil; and, as mulching with half-rotten dung, and extensive waterings in dry weather, are the principal features of culture, it is indispensably necessary that the ground be effectually drained, summer drought and winter saturation being the grand evils to be guarded against. From the latter end of May till Michælmas is the time that asparagus is generally left without any culture, except routine weeding, &c. Now, this is almost the only season that any culture can be of much service to the plant; for it is evident that, if we encourage the plants whilst they are in a state of active, development, that is, when they are shooting up to seed, by forking, frequent hoeing, mulching, and watering between the rows, as if flowers and seed were all we wanted, we shall invigorate the plants, and enable them to form fine plump crowns for next season: but I cannot see how banking the beds up with soil, or mulching them with strawy litter before winter (the roots being then in a state of rest,) can be of any great service to the plants. A short time before the buds appear in spring, a little fine soil may be drawn over the crowns, in order to blanch the lower halves of the buds.

In cutting, let the earth be first scraped away from the bud, that the gatherer may see where and what he is about to cut. Two or three years must elapse, after planting, before any buds can be profitably gathered for use; after which term, the lines may be allowed to remain until they become straggling and unproductive. In most gardens, however, they are generally wanted for forcing af-

ter six or seven years' bearing; in which case only a very slight hot-bed is necessary (say 80° bottom heat,) with 2 in. or 3 in. of any soil under and about the roots; and 5 in. or 6 in. of old tan, or any light soil, over them: atmospheric temperature about 55°.

Roots, placed between two layers of soil in pots or boxes, may be introduced into any early forcing house at work; or trenches may be cut between the lines in the open ground, and hot dung or leaves introduced under hoops and mats. Beds for forcing asparagus, with trenches between cased with brick-work, I consider as expensive and unprofitable.—Gardener's Magazine.

#### ART. XIII.—Miscellaneous Articles.

THE BLIGHT IN PEAR TREES.—A lady who read the notice of the premium offered by the Philadelphia Horticultural Society, sent us a message by her liege lord, a few days since, which we shall relate as near as we can in her own words, as narrated to us by the respected medium of communication.

"Some years since a female friend of her's who had had an estate sold under circumstances which were not agreeable, had a favorite pear tree, which bore fruit of exquisite excellence. Prior to giving up the place, she bored augur holes in it, with a view of killing it, having determined that those who had driven her from the home of her love, should not enjoy the luxury of her delicious pears; but much to her gratification, after her passion had cooled down, and philosophy came to her aid to soothe her injured feelings, she found that the tree outstript all others around it, in its luxuriant growth and fruitfulness."

The very means taken to destroy it, in the opinion of the lady, having imparted vigor and health to the tree, and hence she infers, that the same treatment might prove serviceable in cases of blight. We pretend not to determine either one way or the other; but would barely observe, that it is probable, that owing to some peculiar state of the atmosphere, a chemical operation might have been superinduced, and carried on through the medium of the augur holes, that conduced to invigorate the tree in question. We know, that if holes be made in a living tree, and either calomel or sulphur be inserted therein and confined by plugging, that these substances

are capable of being taken up by the general circulation, and diffused throughout the tree, and is it not equally possible, if not probable, that a similar effect could be produced through atmospheric agency! With these brief remarks, we shall leave the mooted question to be decided by those whose skill in such matters better qualify them for the task.—Baltimore Farmer.

THE DAHLIA. - As this is the season when this beautiful Mexican should be taken from its winter quarters and transplanted, we will remind our readers that, if they expect fine flowers, they must be liberal in manuring the places in which they deposite their roots. A moist, loamy soil, is the best adapted to their successful culture; but by filling up the hole around them with a fat compost, in which virgin mould, spent ashes and well rotted stable manure, are properly commingled, they may be raised any where, open to the sun and air. Care, however, must be taken to keep the plants well watered on every occurrence of dry weather; for stalks of such succulence, and luxuriant growth, are necesssarily deep drinkers, and must have their wants, artificially, if not naturally, supplied. And here let us remark, that those who desire to have them in their greatest perfection, should, most assuredly, give them a watering at least once a week with soap suds, the which, we hold to be to the vegetable kingdom, what milk is to the infant, the most wholesome aliment that can be prepared for it. While all who are particular in having choice flowers will, of course, plant the roots, none should despair of getting good ones from the seed. Last year, out of a comparatively small quantity of seed sown, we got seven Double Dahlias, of transcendant beauty, presenting in themselves a collection as varied as lovely in tint and hue.—Baltimore Farmer.

NEW ORNAMENTAL TREE.—Some of the eastern papers have announced the discovery of a new tree in our forests, which we think from the description must be a valuable addition to our already large class of ornamental evergreens. It has been proposed to call it *Pinus Tivertonensis*, from the place of its growth, which is in Tiverton, Rhode Island. It is a shrub or tree belonging to class xii. Monœcia; and is described as follows,—" Leaves solitary, flat, denticulate, nearly in rows, cones ovate, terminal, hardly longer than the leaves." It is a straight tree, remarkable for the hor-

izontal arrangement of its branches, and in these respects as well as in the position of its cones and leaf bears a resemblance to the *Pinus canadensis* of Bigelow. But what principally distinguishes it from other trees of the same species, is the beautiful red flowers which it is described as producing; these being of various sizes, from the dimensions of a large cup down to that of a dime. The outer leaves of the flower are a faint red, the inner ones a rich deep scarlet. The blossoms appear about the 25th of December, and it has sometimes been used at Christmas, forming a beautiful evergreen for the decoration of churches at that religious festival.

The occurrence of such instances of the discovery of new trees and plants even in the oldest settled parts of our country, shows that the labor of the scientific observer and botanist will not pass unrewarded; while the plants of the wide west offer a most inviting field for investigation, one which as yet, has hardly attracted the notice of science, or submitted its rich stores to the examination of the enquiring and the curious. It is possible some farmer may be disposed to speak lightly of the pursuits of the naturalist, and his investigations; but before he does so, let him remember the debt he owes him in the discovery and introduction to culture, we may almost say the civilization, of nearly all the grains, grapes, and roots, that form so large a part of human subsistence, and add so greatly to the comfort and happiness of our race.—Genesee Farmer.

On Pruning Fruit Trees.— My time for pruning and method of doing it are as follows: any time between the 20th of May and the 10th of June, is the season which I prefer, as the sap is in motion, and the wound will heal over in one half the time of any other season; the tree is also less liable to sucker. In amputating large limbs, I use a fine saw, paring the edge of the wound with a sharp knife, but for small limbs a hatchet, or pruning hook may be used, endeavoring by all means to amputate the limbs as near the body of the tree as possible.— Where the saw is used it would be better to have the surface smoothed by some sharp instrument, in order to prevent the water from remaining on the wound long.— Farmer's Cabinet.

GRAFTING.—A great many different modes of grafting are practised, and minute directions are given in books on gardening for

performing this work. The young beginner is generally more bewildered than instructed by the multiplicity of these directions, unless he understands the *rationale*. By reducing the operation in all its modifications to its first principles, it will become greatly simplified, and the necessary particulars for success at once understood.

In order to cause an adhesion between the graft and stock, it is requisite, first, that the sap which flows upwards through the wood, should be able to pass uninterrupted at the place of their junction. Hence the parts of both must be cut so as to be placed in close contact. Secondly, it is necessary that the juices, in returning through the liber, (or inner portion of the bark) should pass uninterrupted from the graft to the stock. Hence these parts also must be placed exactly in contact. Thirdly, it is necessary that the newly formed woody fibres which descend from the buds of the graft, and which serve to connect the two parts together should pass freely from one part to the other; and also that the cambium or soft substance between the bark and the wood, which serves as food for these young descending fibres, should be continued at this point of junction. Hence the line of separation between the bark and the wood, should, both in stock and graft, be accurately adjusted. On the accuracy with which these three parts of the operation are performed, the success mainly depends. And if these are attended to, it is immaterial how great a variety of modes are adopted. The most inexperienced and unskilful hand, if care is taken in these particulars, could scarcely fail .- Genesee Farmer.

HORTICULTURAL SOCIETY.—A general meeting of the subscribers to the Horticultural Society, was held on Tuesday last, the 4th inst. The Hon. T. N. Jeffrey, President, in the Chair, supported by the two Vice Presidents, the Hon. C. R. Prescott and the Hon. Joseph Allison.

The Proceedings of the last general meeting having been read, the President informed the meeting, that the bill petitioned for by the Society, had passed the Legislature; that it now became necessary to pay for the ground. A subscription was immediately entered into — the President Mr Jeffrey subscribing £10, and the two Vice Presidents, Mr Prescott and Mr Allison £5 each. This being the first general meeting of the year, the President, Vice Presidents, Secretary, Treasurer and Committee, were all unanimously re-elected,

and Mr James Tremain and Mr Andrew Richardson, added to the Committee. The general meeting request, the Committee will take the necessary steps to decide upon the days for the competition meetings, and the prizes to be awarded; and also to adopt such other measures, as may be for the advancement of the Institution. After the proceedings of the meeting had ended, Mr Hewson, a practical gardener, residing in the neighborhood, read a short lecture on Flowers, with which the meeting were much gratified.—

Novascotian.

INFLUENCE OF Exposure.—Many cultivators of fruit have very unphilosophical notions respecting the exposure most favorable to its escape from the destruction of the late frosts incident to our northern climate. They suppose northerly and westerly winds are colder than those of contrary directions, and consequently the cause of the late frosts in the spring, which destroy the fruit, especially peaches. Hence, they select locations protected from the current of these winds, as the only security against their supposed injurious effects. They do this from the mistaken opinion that they are the cause of the frost by which it is destroyed; while in fact they are the only preventives of such destruction, which nature has provided in the whole arrangement of her economy.

It is true, these frosts are dew in a state of congelation, produced in part by the action of these winds; but it is also true that, at the same time, they give the tender buds the best protection they can have against their fatal effect. This they afford, either by preventing an unseasonable development of the fruit bud, or securing it against the injurious effects of unseasonable frosts. In locations sheltered from these winds and exposed to the direct rays of the sun, the season is several days in advance of those exposed to the former and secluded from the latter, and consequently the development of the bud is premature. Hence we see peach and other fruit trees in full bloom on the southern and eastern sides of a hill, while those on the northern and western have not commenced unfolding their blossoms.

If therefore, while both are in these conditions, they are visited by a frost, it is manifest the former will be destroyed, and the latter remain uninjured. But if both are in the same degree of forwardness, it is equally manifest that those exposed to the northerly and westerly winds will be most likely to escape the destruction of the frost, of which it is true they may be a principal cause. If these frosts are merely frozen dew, it follows that those fruit buds will be most injured by them which are most copiously loaded with it. The only security, then, is preventing the dew from remaining upon them — and this is most effectually done by having them exposed to the strong current of northerly and westerly winds. This sweeps the dew from them as fast as it falls and prevents their freezing; while on those sheltered from it the dew remains, the buds are frozen and the fruit is inevitably destroyed.

The same effect is discoverable, though in a less degree, in or chards on plains, both on hills and in valleys. The fruit on trees in the interior is often destroyed by late frosts, while that on those on the borders escapes and grows to maturity and perfection. This phenomenon may be accounted for on the same principle—the winds sweep the dews from the trees on the borders, while on those in the middle of the orchard it remains and is frozen.

The most favorable location, therefore, for fruit trees in this climate, is the northern and western sides of a declivity, and the more open and exposed to the wind the better. In milder climates, where the advance of the season is not interrupted by flate frosts, this reasoning does not apply, and consequently locations more favorable may be selected. But in New England, where these frosts are not unfrequent, the cultivator of fruit must be governed by it, or he will occasionally be subjected to the loss consequent upon the failure of his crop.—Silk Culturist.

To RAISE FORWARD POTATOES.—It is said in the New England Farmer, that potatoes exposed to a warm sun a few days before planting, will be a week more forward than those planted in a common way. As the experiment will cost but little trouble, we think it worth the trial, and would suggest to those who make it, to favor us with the result of their respective experiments, as all such things tend to add to the sum of agricultural knowledge; and to inspire an esprit du corps, highly promotive to the general interests of husbandmen.— Farmer and Gardener.

### ART. XIV .- Obituary Notice.

DIED, in London, on the 24th of January, 1837, J. Sabine, Esq. late Secretary of the London Horticultural Society: he was in the sixtyseventh year of his age, and his death is universally regretted. The following brief sketch of his connection with the Horticultural Society, and his separation from the same, we extract from a memoir of Mr Sabine, in the Horticultural Journal.

"Mr Sabine was a man so well known among gardeners, as well as in all the higher circles of society, that we need scarcely describe his habits or his person, and few people in his sphere of life have been more regretted. The two societies which seem to have enlisted among their members all the loose turbulent spirits in the metropolis, the Horticultural and the Zoological, were, notwithstanding all that has been said and written, under obligations which they could never have repaid; but while respected by all whose respect is desiable, Mr Sabine had the honor of being opposed by some, who envied him the station which he held in the estimation of the public, and sought, by means which we have seen defeated, to deprive him of the honors he had earned in the offices he filled. We who enjoyed the confidence and friendship of the deceased, have not unfrequently observed the contrast between the office of honorary secretary of the Horticultural Society, as filled in his time, and occupied now; and though we can find twenty errors committed by the former, the office, with all its errors, was respected. The chief fault in Mr Sabine was, that of paying too much attention to promises, and relying too much on public professions. Had one half the wealthy people who encouraged his proceedings on the gardens of the society kept their words, and given the liberal assistance they promised. the society would not have been disgraced by exposure, nor degraded by the change of management. Mr Sabine's notion of the Horticultural Society of London was, that its gardens should be the best of the kind, and the collections worthy of such a national repository. It was his misfortune that those who admired his plan and prompted his proceedings, were the last to follow up the good work. by producing the requisite funds; and the personal opposition so industriously got up against him, and even attempted to be planted in the Zoological Society, by a few unprincipled busy-bodies, arose

from the natural enmity of the vain pretenders, who envied him the natural influence which talent and integrity gave him over almost all the classes. When the Dean of Carlisle was in the chair at the Zoological Society, in March, 1830, a lout of this description, a Mr Valentine Duke, make a violent attack on Mr Sabine, which the Rev. Chairman was about to repel, when Lord Auckland gave the flippant blockhead a set down, which spoiled his oratory for some time; for his lordship, after extinguishing the gentleman's light, paid the highest compliment to the good sense, the zeal and attention which Mr Sabine had shown to the institution, and hoped he would continue there. Yet those proceedings did not appear to ruffle Mr Sabine's mind in the least. In the same month the famed committee of inquiry into the affairs of the Horticultural Society made its report; and a Mr Kerr, who liked much to hear himself talk, tauntingly accused Mr Sabine of being secretary, president, council, and gardener of the society, and moved a vote of censure upon him the moment the report had announced his resignation; and as dirty business can be done best in the dark, it was proposed to vote it by ballot. It was on that occasion that an excellent man, Sir Thomas Acland, said, the society ought to take into account some of the good he had done. The meeting spurned the unmanly proposal, and the motion was altogether withdrawn. Mr Sabine's errors in the society were errors only because they were not carried out; and whatever people may say of that mountebank concern now, with Lindley dancing the tight rope, Dr Henderson playing clown, Mr Gower pantaloon, and the two ladies performing columbine, one fact is certain, either that the Horticultural Society ought to have been carried through upon the liberal scale on which it was planned, or it ought not to have been continued at all; and hundreds of the present members regret that so far as all the real purposes of the society - the collecting of exotics - are concerned, it has been useless the last three or four years. Since Mr Sabine resigned his office in the Horticultural Society, he has devoted much time to the gardens of the Zoological Society, where the dahlia is cultivated in greater variety than in any public or private garden. Indeed, to this flower had Mr Sabine become so entirely devoted of late, that he spared no means to learn the origin of every kind, where and by whom it was raised and named, and, if he could, from what seed it came. Among numerous letters and papers in our possession, we

shall have ample opportunities of illustrating this desire to ascertain the history of every individual variety. Soon after Mr Sabine's resignation as honorary secretary of the Horticultural Society, Mr Burke, (seeing, we suppose, that Mr Sabine had the superintendence of the Zoological Farm at Kingston,) moved that it be given up. On that occasion, Mr Sabine defended its continuance very earnestly, and silenced all remarks about being interested, by showing he had expended a hundred and fifty pounds of his own money, because he would receive no reimbursements; and though very well planned and arranged on the part of the malcontents, an amendment for the continuance of the farm was carried by a majority of At the last annual meeting of the Zoological Society, Mr Sabine was one of the council who went out of office by rotation, and he took considerable interest in the election, on account of the opposition list, got up among the well trained enemies to the council. After a good deal of barking on that day, the result of the ballot placed the busy-bodies in such a fragment of a minority, that any idea of commanding the respect or support of a majority in future, must be bordering on the insane. Indeed, poor Sabine knew every movement of his mole-like adversaries. The ramifications from Regent street - Dr Henderson's industrious perambulations - the honorary secretary's cogitations - and all the secret machinery of the little agitating knot of worthies, were as well understood as if they had all taken place in open daylight, and were as effectually defeated. Upon the whole, few lived more respected by scientific men, or more envied by pretenders; few have died who were more missed in the particular circles that they have moved in. For our own part, we shall not, for some time, attend a floral exhibition without recalling him forcibly to our mind; and as many young gardeners owe much to his kindess of heart, so many have lost the benefit of his influence. Mr Sabine had many marks of distinction on account of his valuable services; the following, in particular, from the Horticultural Society:

<sup>&#</sup>x27;To Joseph Sabine, Esq. the Honorary Secretary, the Gold Medal, as a token of the high sense entertained by the Society of the very great assiduity and intelligence manifested by him, as well in the formation of the by-laws as in the arranging and settling the long and very intricate accounts of the Society. June 4, 1816.'"

#### QUINCY MARKET.

(Reported for the Horticultural Register.)

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APPLES, Baldwins	barrel	2 00	2 25
Greenings,	. "	2 00	2 25
Russetts,	66	2 00	
Bell flowers	46	2 50	
PEARS, Iron,	bushel	3 00	
CATHARINE,	66	3 00	
CRANBERRIES,	"	8 00	8 50
CHESNUTS,		3 00	3 50
CUCUMBERS,	a piece	<b>7</b> 5	1 00
CAULIFLOWERS,	head	37	75
CELERY, White Solid, and Rose Colored, -	root	12	25
CABBAGE, Red Dutch,	dozen	50	62
reen Globe Savoy,	44	62	75
Large Drumhead,	"	50	75
HOR~ DISH,	pound	10	12
RADi S, Early,	bunch	12	
Turnip Rooted,	"	12	17
LETTUCE ROSE or Tennisball,	head	6	8
POTATOES, Chenangoes,	bushel	75	1 00
Eastport,	"	75	1 00
, St Helena,		1 00	1 25
DANDELIONS,	1 peck	75	
SQUASHES, Crook neck,	pound	9	10
Valparaiso,	- "	5	6
SHAGBARKS,	barrel	4 00	4 25
ONIONS, White Portugal,	bushel	1 00	1 25
Red,	66	1 00	1 25
Bunch Onions,	hundred	4 00	4 25
PICKLED CUCUMBERS,	gallon	31	37
DRIED APPLES,	pound	4	5
LONG BLOOD BEETS,	bushel	1 00	
PARSNIPS, Large Dutch,	66	75	1 00
TURNIPS, White Flat	46	50	
Ruta Baga	66	50	
Long Yellow French,	"	50	
		4.8	FW31

There has been little change in the market during the past month. The pressure of the times, affects even the operations of their business, so the marketers say. Lettuce, Radishes, Parsley, and Spinach come in very well. Cucumbers have made their appearance. We have seen some noble ones, raised by Mr Thomas Willott, of Roxbury, the Johnson Early Frame. They sold readily for \$1 00 each. At Mr Staples' Stall was one this week measuring 15 inches in length, which was sold to a New Yorker, for ONE DOLLAR.

Boston, April 30, 1837.

## HORTICULTURAL REGISTER

AND

#### GARDENER'S MAGAZINE.

JUNE 1, 1837.

ART. I.—On the advantage of exact observation and knowledge of the Foliage of Fruit Trees and Flowering Plants.—By J. E. TESCHEMACHER.

Ir has always appeared to me that many of the most important discoveries yet to be made in Botanical knowledge may originate in experiments on and attention paid to the forms and functions of the leaves of plants.

The roots extract the juices from the earth, the stems and branches convey these juices nearly unaltered to the leaves - but these are nature's true laboratories - in them the sap is evapora ed to its due consistence - is prepared for analyzation and separation into portions, each containing the quantity necessary for the development of every perfection of flower and seed, leaving a residue which is returned to the root by vessels assigned for that purpose. The surfaces of leaves contain pores by which carbonic acid gas is absorbed and oxygen exhaled — in factin the leaves is performed almost every operation which is requisite to fit the sap of a plant for producing the flower, its colors and fragrance, its stamens, pistils, pollen and seed; nor is this flower or seed produced until the leaves have accumulated sufficient of this prepared juice to bring them into being and perfection. In some plants as annuals this takes but the short period of one year; in perennial plants two years are requisite; in many fruit trees as apple, pears, &c. several years elapse ere the elaborated sap in the leaves accumulates sufficiently to produce 26

fruit — and in the great American Aloe (Agave Americana) fifty to one hundred years are necessary before its leaves give birth to its magnificent spike of flowers.

Those who superintend nurseries where young fruit trees are raised, or who possess orchards on a large scale, might make many interesting observations on this subject; for instance, many trees bearing large fruit have large leaves, at least among pears, few with small leaves bear large and fine fruit; attention to such facts will always facilitate a judicious selection amongst numerous seedling plants, and save both time and trouble, particularly in those cases where many years are required previous to the ripening of fruit, and when purchases are made in the autumn, as no means of discrimination then remain then but the leaf; there are other distinguishing appearances of leaves on which correct judgment may be formed—as shape, woolliness, &c. Mr Van Mons has already made several experiments on this subject, which are well worth studying; proceeding as they do from so practised an eye and such an intelligent mind.

It is generally admitted amongst vegetable physiologists that the flower, (corolla,) its pistils, stamens, seed, vessels, &c., are but so many different transmutations of the true leaf. Thus the Calyx is a combination of several leaves, either distinct, or joined together at their edges according to its form; the flower also leaves, distinct or joined, adorned with various colors; the stamens equally leaves, bearing anthers, but when forming a double flower without them. This is beautifully exemplified in several of the lately raised Camellias, for example, in that figured in the first volume of the Register—var., Kurtzii. The pistil and seed vessel are leaves rolled up and combined according to particular laws, the study of which is one of the greatest pleasures of the botanist, they furnishing marks which serve as excellent distinctions of different genera and species.

Still unless some use be shewn in making these observations the time occupied in them would be idly spent.

Thus the petal (flower leaf) of the flower, being a true leaf, but nearer the seed and more distinctly connected with it than the green foliage, may be reasonably expected to exert a more direct influence on its quality; — that it does so is well known to every florist, who, invariably finds that seeds from semi-double flowers, that is those containing an unusual quantity of petals, produce most double flowers. What this influence is or in what manner it is exerted, whether

the increased number of petals sends a larger quantity of petalic juice to be condensed in one seed, or whether this juice is by the extra number of petals exposed to a larger surface of heat and light or gaseous action and thus increased in the peculiar faculty of transmuting stamens into flower leaves, are questions for botanical experiment. But the fact has been long known, and observed, for I find in an old work on gardening published 150 years ago, the acute remark, that those stock gilly flowers which have most leaves will produce most seed of double flowers adding, "When in seed flowers we find one more leaf than usual, conclude that nature has prepared for an alteration." Then in flowers where the seed forms the centre surrounded by the petals, for instance in the Composite tribe containing the dahlia, sunflower, &c., the Ranunculus tribe and others, the additional petals when it is inclined to become double generally appear first on the outer edge of the centre, and not in the middle — in other words, near to the usual petals. In gathering the seed of these flowers therefore from which to raise other double ones, those which lie nearest these unusual petals are most likely to produce the desired effect. I have no doubt, facts equally interesting may be observed of double flowers in other tribes. And do not let the Botanist turn away in disgust when he sees a double flower, calling it a monstrous imperfection, but rather submit it to scientific examination. It will be found as direct and perfect an operation of nature, although perhaps more complicated, as that which produces his type of perfection, the single flower.

It is however to the green leaves of trees and plants that I would invite more especial attention, and that no doubt may exist of the importance attached to the character of foliage, I would observe that the three grand divisions of the vegetable world are characterized by a peculiar and distinct organization of the leaves. Thus the division of Exogenous plants or those with bark wood and pith as the oak, elm, rose, &c., have them universally with a net work of veins branching in every direction. The division of Endogenous plants or those without bark or pith as the cane, the palm, &c., have them with veins running in parallel lines from the tip of the leaf to the stalk.

The division of Acrogenous plants, as ferns, &c., when the leaves have veins at all have them forked.

The most common observer cannot fail being delighted with the

beauty of the first leaves that burst from the different varieties of rose bushes. Those of the Celestial rose, for instance, are of a bright brownish red, round at the upper end, covered with a soft glaucous hue, which last indeed is a peculiarity attendant more or less on all white and slightly tinged roses. The leaves of some of the late imported varieties are exquisitely beautiful, particularly one called Lafleche Mousseuse, the midrib and edge of which is covered with long moss. Most seedling varieties of flowers differ from each other in foliage, and few more than roses. The study of this part of a plant would of course considerably increase the pleasure taken by the Cultivator in his favorite pursuit, affording great interest until the perfect flower crowned his anticipations. It would probably be tedious to the reader were I to enumerate the technicalities of the leaves of any of the varieties, but he may be assured that what appears dry on paper is highly interesting when read from the book of nature and studied with the plants themselves. The growers of seedling pinks can by constant observation pretty well decide which plants are likely to turn out good flowers - from the foliage, or grass as they technically term it, thus all with broad and thick foliage are rejected while such as have narrow leaves and those not superabundant are preserved. The same rule however does not hold with Carnations; and this knowledge where perhaps not more than one in fifty seedlings is good for anything, saves much trouble and labor. The leaves of the different species of Camellia vary much more than is generally supposed by those who have not compared them together, and the cultivator of the Dahlia cannot but have observed the varieties of foliage which add lustre and brilliancy to the charms of this favorite flower. The study of this part of the vegetable kingdom is of much more use still, indeed is absolutely necessary to enable any one to distinguish the Trees of the forest, and especially to discriminate between the species belonging to the different genera. I cannot call to mind how many varieties of the Oak are natives of America. Most of them are described by Michaux, and the quality of their timber differs considerably; a knowledge of the form and size of their leaves is by far the readiest means of recognizing them -so with the Maple, Elm and other trees whose flowers or fruit are too small, inconspicuous or evanescent to afford evident marks of distinction.

To the Botanist a perfect knowledge of foliage is indispensable,

particularly in the examination specimens in the herbarium, and the Medical student in this country, where the roots and foliage of indigenous plants are in considerable use, should certainly be well informed on the subject. The artist who is desirous of attaining to something more than mediocrity in his profession, can of course not neglect this study, for he may easily be betrayed into the error of giving to his landscape trees either not indigenous in the place he wishes to represent, or depict them with forms unauthorized by nature.

The entomologist likewise should become acquainted with the the leaves of the plants on which the various insects he studies feed.

Thus without wishing to attach undue importance to a minute knowledge of the leaves of trees and plants, or to recommend the study of it as being combined with more pleasure and interest than it actually possesses, it appears evident that the value of an habitual acquaintance with foliage almost equals that of an habitual acquaintance with flowers.

# ART. II.—On the Cultivation of Heliotrope. (Heliotropium peruvianum.) By F. F. Ashford.

Heliotropium peruvanium, or Peruvian Turnsole, is an ornamental trailer of Peru, whence it was introduced in the year 1757. The generical name was given by Linnæus, from *Helios*, the sun, and *trope*, turning: in allusion to the flowers being always turned toward the sun. Both Pliny and Dioscorides, assert the same reasons as its Swedish author. It belongs to Pentandria Monogynia. Nat. Ord. Boragineæ.

This production of the Peruvian clime, is well worthy of cultivation; its delightful fragrance, and (by the following management) long continuance in flower, will repay any occasional care or extra attention bestowed upon the plants. I have very often seen them grown and treated in a similar manner to greenhouse plants, but when treated in this manner, I always notice leafless, sickly-looking plants. Upon close application to the culture of the Heliotrope, in common with others, I find the following method to answer best, and produce as fine flowering plants as any I ever see. Such being

the case, I humbly present the particulars of the same for your numerous correspondents and readers.

Propagation.—Cuttings must be procured about the latter end of February or beginning of March, planted in pots of rich garden soil, and plunged in a working Cucumber or Melon frame. When the sun is powerful, that part of the light where the pots are under, must be covered with something to shield them from the overpowering heat of the solar rays. Water must be given when required, and all mouldiness, decayed leaves, &c. should be removed as they appear: for if suffered to remain, they will probably injure the whole. In two or three weeks, the cuttings will be sufficiently struck for potting: but, previously to so doing, remove them to an airy part of the stove for a few days, to harden. If a succession of flowering plants for the autumn and winter months are required, more cuttings may be put in during May and June. If any plants are wanted for turning out into the flower garden in summer, cuttings must be struck in September for that purpose.

Cultivation for Flowering in Pots .- Provide for a good compost equal quantities of maiden loam, rotten horse-dung, and sandy peat; a little leaf mould might also be added. The whole should be well chopped and incorporated together, after having been ameliorated by the frost and atmosphere of the preceding winter, but should not be sifted. When the cuttings have been in the stove for a few days, pot them off into fortyeight-sized pots, using the above compost, and allowing as much soil to adhere to the roots as possible. Pinch off the extremities of each shoot, to cause the plants to grow bushy; and after giving them a suitable watering, place them in a shady part of the stove till they have taken root and begun to grow, when they should be removed to a more exposed situation in a house of the temperature of from 60 to 70° Fahrenheit. Due attention must be paid to repotting them as often as they ap\_ pear to mat around the outside of the balls, or the plants will soon assume a sickly hue, instead of being clothed with fine green foliage. These plants are very subject to the attacks of that destructive inmate of the hot house - that pest to gardeners - the green fly, (aphis.) These should not be permitted to remain, but be eradicated as soon as perceived, by syringing them every morning with pure water. If the plants are removed, when in bloom, to the greenhouse or conservatory, they will continue in flower much longer than when remaining in heat. When they have done flowering set them in a cool part of the greenhouse until the following February, when they should be cut down, their balls reduced, themselves repotted in the above soil, and plunged in a hot bed, to produce healthy young shoots for propagation; after which, the old stools may be either turned out into flower borders, or thrown away, as young plants raised every year are far more preferable for flowering in pots.

Cultivation for Flower Borders. - After cuttings are struck, let them be potted off in the same sized pots and sort of soil as above noticed, and wintered in the greenhouse or in a house. In the following March, put them into pots a size larger, to cause them to produce fresh shoots and roots. Towards the middle of April, begin to expose them gradually to the open air; so that about the end of May, if the weather prove mild, they may be able to bear being planted out in beds or baskets, composed of good mellow. rich soil. Should cold nights happen after they have been turned out, as is sometimes the case, they must be defended by means of hoops and mats, or canvass; thus protected, they will grow and flower freely, till the chilly nights of autumn put a check to their vigor: they must then be taken up with their balls entire, and potted in suitable sized pots. If placed in the stove and shaded for a few days, they will continue to flower till Christmas, when a few, cuttings may be taken off for early propagation, and the old roots thrown away.

I have thus endeavored, in as short a space as possible, to pen down my process; and I do not hesitate to say, that it will, after a fair trial, satisfy every grower of this native of the Peruvian shores.

—Flor. Cab.

### ART. III.—British Agriculture. By DR HUMPHREY.

I HAVE spoken already, in general terms, with a little of that enthusiasm, perhaps, which first impressions are apt to beget, of the moral beauties and high cultivation of England, and parts of Scotland. A glance, in July or August, from a few of the thousand eminences which invite your steps, is sufficient to convince you,

that the prodigious agricultural resources of the country are developed, with extraordinary industry, skill and success. But these enchanting glimpses, are too rapid and indefinite, to afford any satisfactory data, from which to calculate the gross produce of the island. You want to sit down in your closet, with such statistics, as may be gleaned from the reports of Parliamentary committees and other authentic documents, and by the help of these, to make out a condensed abstract, embracing all the items, which go to swell the vast aggregate of British agricultural production. For brevity's sake, I shall include what I have to say of the agriculture of Scotland, under the present general head, although most of the estimates will have more special reference to England and Wales.

It is the opinion of competent judges, that the advances made in the agriculture of Great Britain during the last seventy or eighty years, are scarcely exceeded by the improvement and extension of its manufactures, within the same period; and that to these advances, no other old setttled country furnishes any parallel. That they have been very rapid, indeed, the following figures and comparisons abundantly show. In 1760 the total growth of all kinds of grain in England and Wales, was about 120,000,000 of bushels. To this should be added, perhaps 30,000,000, for Scotland - making a grand total of 150,000,000. In 1835, the quantity in both kingdoms, could not have been less than 340,000,000, of bushels. In 1755, the population of the whole island, did not much, if any, exceed 7,500,000. In 1831 it had risen to 16,525,180, being an increase of 9,000,000, or 120 per cent! Now, the improvements in agriculture, have more than kept pace with this prodigious increase of demand for its various productions; for it is agreed on all hands, that the 16,500,000, or rather the 17,500,000, (for more than a million have been added since 1831,) are much fuller fed, and on provisions of a far better quality, than the 7,500,000 were, in 1755. Nor is Great Britain indebted at all, at present, to foreign markets for her supplies. Since 1832, she has imported no grain worth mentioning, and till within the last six months, prices have been so exceedingly depressed, as to call forth loud complaints from the whole agricultural interest of the country. England is at this moment, so far from wanting any of our bread-stuffs, if we had them to export, that she has been supplying us all winter liberally from her own granaries, and according to the latest advices, she has still

bread enough and to spare. Again, it is estimated by British writers, of high authority, that the subsistence of 9,000,000 of people costs, in raw produce, not less than £72,000,000, or £8 for each individual per annum. According to this estimate, the annual product of this great branch of national industry is \$350,000,000 more, at present, than it was in 1755; which is more than twice the value of the whole cotton manufacture of the country, in 1831. Now if it costs \$350,000,000, to feed the increased population of 9,000,000, then to feed the present population of 17,500,000, must cost near \$700,000,000! What an amazing agricultural product, for so small a territory! And yet, it is the opinion of practical men of the highest respectability in England, that the raw produce of the island, might be well nigh doubled, without any greater proportional expenses being incurred in its production. That is to say, 35,000,000 of people might draw their subsistence, from that one little speck in the ocean! Now we have a territory more than fifteen times as large as the island of Great Britain; and what should hinder it, when it comes to be brought under no higher cultivation than some parts of England and Scotland, from sustaining a population of five, or six hundred millions of people? This would give to Virginia something like thirty millions - to Illinois and Missouri about the same number each - to New York near twenty five millions, and so in proportion to the other States. I am quite aware that this estimate will be regarded as extremely visionary and incredible, by many of your readers; but not more so, than it would have been thought, in the middle of the last century, that England, Scotland and Wales could ever be made to sustain thirtyfive, or even thirty millions.

Among the causes which have more than doubled the agricultural produce of Great Britain, within the period just alluded to, may be mentioned the enclosing of six or seven millions of acres of commons and common fields, by which their annual product has been increased, in many cases, more than tenfold—the cultivation of heaths and other waste lands—the redeeming of extensive and inexhaustibly rich fens, from the possession of aquatic birds and animals—the great improvement in agricultural implements—the furrow draining of clay and other cold and stiff soils—the better rotation of crops—the extensive introduction of turnips and clover—the immense increase of common manure, and the introduc-

tion of one at least, whose extraordinary nutritive qualities have but recently been discovered. Next to wheat, the turnip crop, which forty, years ago was hardly worth mentioning, is now more valuable than any other, both to landlords and tenants. It is used chiefly in feeding and fattening cattle and sheep; and while immense numbers of both are kept in the most healthy and thriving condition upon this vegetable, one species of which, the Ruta Baga, has lately been introduced and is extensively productive, the lands are greatly enriched and soon prepared for any other crop, which the farmer may find most profitable in his system of rotation. Clover, too, is doing much to enrich the soil of England and Scotland, and to reward the labors of those who moisten it with the sweat of their brows. It is surprising to see, to what an extent the light, sandy lands of England have already been redeemed from comparative sterility under this cultivation, and are now sowed with the finest wheat. The process is still going on, and bids fair to proceed as long as there remain any such lands to be reclaimed and enriched. Indeed, who can tell how much the cultivation of the turnip may ultimately add to the wealth, and help to sustain the population of Britain. According to an estimate which I have lately seen, it is now worth many millions sterling, per annum, to the single county of-Norfolk. Carrots, also, are found to be a very profitable crop in some parts of England, and the farmers are turning their attention to the cultivation of this very nutritious esculent, with increasing interest and advantage.

Among the several kinds of manure, which have long been in high repute, lime and marl are inexhaustible; particularly the former, which the low price of coal brings at a cheap rate. On some soils, and near the kilns, it is used in great quantities. I have seen fields covered with it, just as ours are with barn manure; and when it is spread, the ground appears, at a little distance, as if it were covered with snow.

But the richest and most profitable kind of dressing which has yet been tried, and which is a new source of agricultural wealth to Great Britain, is bone manure. It began first to be used, on a large scale, in Yorkshire and Lincolnshire, where its influence has been all but miraculous! Extensive tracts of country, which a few years ago were mere wastes, occupied by rabbit warrens, have been converted into some of the finest and best managed farms in England

This signal improvement, though it did not begin, has been carried to its present perfection, by the use of the manure just mentioned. Since bone dust has come into general use, the turnip crop has been increased in many instances, ten fold, and in few less than four or five fold, and the effect has been equally surprising upon the succeeding crops of grain, on the same land. This is the testimony of practical men, well acquainted with all the circumstances, and they have no doubt that the soil will go on progressively improving, and requiring a less quantity of bones, annually, from its increased fertility and power. It answers best on light chalky soils. A single farmer in Lincolnshire, is said to have generally about six hundred acres dressed, almost entirely with bone manure, furnishing a vast supply of food for cattle, and of common manure for other lands, and is fitting those on which it is sown for bearing the most luxuriant crops of wheat and barley.

In Scotland, the use of bone manure is still more recent, but scarcely less productive. In the Lothians, in Berwickshire, and in fact, everywhere, it is working wonders. Being so light and easily transported, compared with any other kind of manure, many a rugged and hilly tract is fertilized by it, which must otherwise have remained in a state of nature. To pulverize the bones, mills are constructed in the vicinity of all the large towns, and besides what their own markets furnish, large quantities of bone dust are imported by the Scotch farmers.

I am almost ashamed to offer your readers this brief and meagre sketch of the present state of British agriculture; but neither time nor space will permit me to enlarge. There are limits, no doubt, beyond which improvements in cultivating the soil, cannot be carried. But there is no reason to think, that these limits have yet been approached, even in the most productive districts of England and Scotland — for the science of agriculture never advanced more rapidly than it has done within the last few years; or rather, I should say, were I entitled to speak with any authority on the subject, it seems to be almost in its infancy. Who that looks at the astonishing improvements of the last fifty years, both in the science and the art of husbandry—who that recollects how lately the potato, that most rich, nutritious and productive of all our farinacious esculents, has been brought into general use — who that considers what inexhaustible sources of nutrition and fertility and wealth, the

turnip and other green crops have so recently become in Britain, will undertake to say, that other vegetables, still more nutritious and productive, may not yet be introduced and brought under general cultivation? Who can tell, what new substances scientific and practical agriculturalists may yet find, possessing far higher fertilizing virtues, than any now in use, or what combinations and mixtures chemistry may furnish, so cheap and so abundant, as to put a new aspect of fertility upon lands already most productive? Who, in looking at the best acre in all England, would venture to say, that it can never, by any possible improvements and discoveries, be made more productive of human sustenance than it now is? Who knows, but that a hundred, or a thousand years hence, it may yield four fold? Who, in short, can even conjecture, what amazing undeveloped agricultural resources yet lie hidden in lands, which have hitherto been regarded as scarcely worth tilling at all? For myself, I do not deem it at all extravagant to predict, that in the millenium, if not before, the single island of Great Britain will produce food enough for a population of fifty millions; nor, that when swords shall be beaten into plough shares, and spears into pruning hooks, and instead of the thorn shall come up the fir-tree, and instead of the briar shall come up the myrrh-tree, the present territory of the United States will pour the boon of plenty in the laps of a thousand million of inhabitants! Yours, sincerely.

## ART. IV .- Effects of Cultivation - Curious Facts.

THE history of some of our commonest agricultural and horticultural products, furnishes a useful lesson respecting the beneficial effects of careful cultivation. The husbandman may read, in the case of the Potato particularly, not merely the effects produced by accident in the introduction of useful plants, but the vast improvement resulting from judicious culture.

The speech of Col. Knapp, in delivering the premiums awarded by the American Institute to individuals residing in Newark, embraced many curious facts, which will probably be read with profit by intelligent farmers. We quote a few paragraphs:

"Every thing in this country," said he, "has been brought forward

by protection. In this bleak clime, but few of the sustaining fruits of the earth were here indigenous, or in a perfect state. Even the Indian corn, so often considered as native here, was with difficulty acclimated. It was brought from the south, and by degrees was coaxed to ripen in a northern latitude. The aborigines who cultivated it, taught the pilgrims how to raise it; they plucked the earliest ears with the husk, and braided several of them together, for the next year's seed, and their care was rewarded by an earlier and surer crop.

"The pumpkin, brought from Spain, was first planted in Rawley in Massachusetts, and it was several years before it came to a hard, knotty shell, which marks the true yankee pumpkin, such as are selected for the golden pies of their glorious thanksgiving festival.

"Our wheat was with difficulty acclimated. That brought from the mother country had grown from spring to fall, but the season was not long enough here to ensure a crop. It was then sown in the fall, grew under the snows in winter, and catching the earliest warmth of spring, yielded its increase by midsummer.

"Asparagus, which is now the delight of all as an early vegetable, and for which several millions of dollars are paid our gardeners yearly, is of late culture in this country. At the time of the revolution, asparagus was only cultivated on the seaboard; this luxury had not then reached the farmer of the interior.

"The history of the potato is a singular one. Rees' Encyclopædia states that the potato was brought from Virginia, by Sir Walter Raleigh, to Ireland. The writer should have said from South America, in the latter part of the sixteenth century. He had no idea of its ever being used as an esculent, at that time. It was pointed out to him as a beautiful flower, and its hard, bulby root was said, by the natives, to possess medicinal qualities. He took it to Ireland, where he had estates, presented to him by queen Elizabeth, and planted it in his garden. The flower did not improve by cultivation, but the root grew larger and softer. The potato in its native bed was a coarse ground nut. The thought struck the philosopher to try the potato as as an edible, and boiling and roasting it, found it by either process excellent. He then gave some of the plants to the peasantry, and they soon became, in a measure, a substitute for bread, when the harvest was scanty.

"The potato was successfully cultivated in Ireland, before it was

thought of in England; it grew into favor by slow degrees, and was so little known when our pilgrim fathers came to this country, that it was not thought of for a crop in the New World. It would have been an excellent thing for them, if they had been acquainted with the value of the potato. It was not until 1719, that the Irish potato reached this country. A colony of Presbyterian Irish, who settled in Londonderry, in New Hampshire, brought the root with them. These people found their favorite vegetable flourished well in new grounds. By degrees, their neighbors came into the habit of raising potatoes; but many years elapsed before the cultivation of them was general among the yeomanry of this country. Long after they were cultivated in New England, they were held in contempt, and the master mechanic often had to stipulate with his apprentice, that he should not be obliged to eat potatoes. An aged mechanic once informed me, that he raised nine bushels, having at that time (1746) a dozen apprentices, but did not venture to offer them a boiled potato with the meat, but left them in the cellar for the apprentices to get and roast as they pleased; he soon found that he should not have enough for seed, and locked up what was left. The next year he raised the enormous quantity of thirty-six bushels; the neighbors stared—but his boys devoured them during the following winter.

"About this time some of the gentry brought this vegetable on their tables, and the prejudice against them vanished. Thus, by degrees, a taste for this food was formed, never to be extinguished. The cultivation of the potato is now well understood—a crop ameliorates, instead of impoverishing the soil, and the culture can be increased to any extent. Thus, by the curiosity of one lover of nature, and his experiments, has a humble weed been brought from the mountains of South America, and spread over Europe and North America, until it is emphatically called 'the bread of nations.' Still the country from whence it was taken, has been too ignorant or superstitious to attempt its cultivation, until within a few years. Now, the lights of science are chasing away the long, deep shadows of the Andes.

"Rice was brought from India in 1721, and cultivated by way of experiment in South Carolina. It succeeded well, and was, for many years, the staple article of the State. It seems strange, but it is not more strange than true, that a vegetable should have a moral

and religious influence over the mind of men. Brahma could never have enforced his code of religious rites, with an hundred incarnations, if India had not abounded in the rice plant. His followers would have become carnivorous, notwithstanding all the rays of his glory, and the awful exhibition of his might, if he had not driven the animals away, and secured the vegetable kingdom for his worshippers. Man is, in spite of his philosophy, a creature of the earth—and in a common measure, like the chameleon, takes the hues of his character from his position, and his food.

"The cotton plant was at first cultivated as a flower in our gardens, and a beautiful flower it is. This plant alone has made a revolution in the finances of the world. Look at the growth and consumption of it in the United States, and the immense manufacture of it in England, where it cannot be grown, and you will find my assertion true in its most extended sense.

"Until our purchase of Louisiana, this country was indebted to the East and West Indies for sugar. In the country—the thirteen United States—sugar and molasses were made in small quantities, from corn stalks, sweet apples, pumpkins, and maple sugar trees; but all put together, furnished but a small part of the sugar demanded by the great mass of people. Our people are fond of saccharine, or sweetening to use our peculiar term for it.

"The corn stalk, the pumpkin, and the sweet apple, are given up for sugar or molasses—and the maple tree is falling before the axe, and we must rely on the sugar cane alone, unless we can substitute, as in France, the sugar beet. The culture of the sugar beet has been commenced with us, and probably will be successful."—Genesee Farmer.

ART. V.—On the Management of the Double Flowered Pomegranate, Punica Granatum Multiplex. By Mr. David Whale, Gardener, Winchester.

THE Pomegranate is an old inhabitant of our gardens, but it seems to have been known to the Africans for many ages before it came into our possession; it is mentioned in holy writ, as being in the possession of the Egyptians more than 3000 years ago; it is a na-

tive of the South of Europe, and North of Africa. Dr. Sibthorp, informs us, that it is found plentiful in Greece, both in a wild and cultivated state; it was introduced into this country about the year 1548. The double flowering kind is much more esteemed than the other in this country, for the sake of its large fine double flowers. which are of a most beautiful scarlet color; and if the trees are well managed, and supplied with due nourishment, they will continue to produce flowers from four to five months successively, which renders it one of the most valuable flowering trees; this sort may be rendered more productive of flowers, by grafting it upon stocks of the single kind, which check the luxuriancy of the trees, and cause them to produce flowers upon almost every shoot. There have been various ways recommended to manage the pomegranate, so as to make it flower freely, and forty years' experience has taught me what I conceive to be the most successful method. I do all my pruning in the summer season, training the branches at a regular distance, of about four inches apart, in the same way as I train a plum tree; towards the latter end of June I look over the trees, and remove all the shoots that are running to wood, at which time they are young and tender, and are easily removed without the assistance of a knife. Care must be taken to leave all blossom shoots and spurs, these are easily distinguished from wood shoots; this I do about three times during summer, and by this treatment the tree continues to flower four or five months, making a very grand appearance, and repaying by its beauty for every care a gardener can bestow.

P. S. The knife should never be used about these trees in winter, except to remove decayed branches, &c. They are easily propagated by layers or cuttings. To accomplish the first: in March, select some of the young branches for the purpose, give a little slit at a bud underneath, they will easily strike root without slitting, and I consider that method to be the safest; lay them in the usual way, water them occasionally during the summer, and by the following autumn they will be well rooted so that they may be taken off and removed to any warm situation, to gain strength, before they are planted where they are to remain.

Cuttings.—If cuttings are required in June, take some young tops of branches, select a warm place in the garden, place them under a hand-glass, shade them in hot weather, and by autumn they will have taken root.—Floricultural Cabinet.

### ART. VI.—Trillium Erectum.

WE have been politely favored by Col. S. Dwight, of Thomaston, Maine, with a living plant of Trillium erectum, brought from that place, of such extraordinary luxuriant growth, that we feel pleasure in recording its appearance and dimensions in our Magazine. From one root rise three flower stems full 12 inches high, each crowned by a flower of a deep, rather dull, amaranth color, very dark and distinct veins, the single petals of which exceed 2 inches in length, thus forming a corolla of 12 inches circumference - the three rhomboidal green leaves from the centre of which the flower rises are each 4 1-2 inches long by 4 broad :- it is a truly magnificent plant of the tribe; and the gentleman who has taken the trouble to bring it so far is entitled to our warmest thanks; we have placed the plant in hands where it is highly valued and will be sedulously taken care of.\* A figure of Trillium pictum (Erythrocarpum of Michaux,) may be found at page 241 of the first volume of our Register, which will give some idea of the form of this genus. We should like to see a more frequent exhibition of this zeal in bringing into notice the beautiful plants with which our native country abounds. A garden where these could be assembled and cultivated in abundance, with due attention to their various habits, would be the pride of the city in whose vicinity it existed, as well as the delight of many European travellers to whom the plants in the American departments in the celebrated garden of their own countries are objects of the greatest interest.

It will give us great pleasure to receive plants of the Orchis, Cypripedium, Trillium, Cymbidium, Arethusas, or any of the other beautiful indigenous tribes which abound in many parts of our own country, promising to give them a faithful description, and place them in hands where they will be duly appreciated.

They may be taken up when in flower with a ball of earth and placed in boxes, covering the surface with wet moss, and binding it on with bass strings or twine, and tying the flower stem to a small stick.

J. B.

<sup>\*</sup> Those which are found in this neighborhood are seldom more than half this size.

Viola tricolor. Viola. ART. VII.—Heart's-Ease. Syn genesia monogynia.

French, herbe de la Trinité; pensées [thoughts].-Italian, flammola [little flame]; viola farfalla [butterfly violet]; viola segolina [winged violet]; flor della Trinita; suocera e nuora [mother-in-law and daughter-in-law]. The Greeks have named it phlox [a flame.]

This beautiful flower is a native of Siberia, Japan and many parts of Europe. Mr Brooke, speaking of the forests in Sweden, says, "innumerable flowers of the liveliest colors peeped out between the masses of brown rock, enamelled with various kinds of lichens; and huge fragments were variegated with beds of the Pansy, or Heart's-ease, displaying its different hues, relieved by the dark green of the sweeping pines.\*" It is a general favorite, as might be supposed from the infinity of provincial names which have been bestowed upon it from its beautiful colors:-

> Love in Idleness. Jump up and kiss me. Live in Idlenes. Look up and kiss me-Call me to you. Kiss me ere I rise. Cull me to you. Kiss me behind the garden-gate.

Three faces under a hood. Pink of my John. Flower of Jove. Herb Trinity.

And flamy, because its colors are seen in the flame of wood.

It is a species of violet, and is frequently called the Pansy-violet, or Pansy, a corruption of the French name, pensées.

The smaller varieties are scentless, but the larger ones have an agreeable odor. Drayton celebrates its perfume by the flowers with which he compares it in this respect; but then, to be sure, his is an Elysian Heart's-ease:

> "The Pansy and the violet, here, As seeming to descend Both from one root, a very pair, For sweetness do contend.

"And pointing to a pink to tell Which bears it, it is loth To judge it; but replies, for smell That it excels them both.

<sup>\*</sup> Brooke's Sweden p. 54.

"Wherewith displeased they hang their heads,
So angry soon they grow,
And from their odoriferous beds
Their sweets at it they throw."

The Heart's-ease has been lauded by many of our poets; it has been immortalized even by Shakspeare himself; but no one has been so warm and constant in its praise as Mr Hunt, who has mentioned it in many of his works. In the Feast of the Poets, he entwines it with the Vine and the Bay, for the wreath bestowed by Apollo upon Mr T. Moore. In the notes to that little volume, he again speaks of this flower, and I do not know that I can do better than steal a few of its pages to adorn this.

"It is pleasant to light upon an universal favorite, whose merits answer one's expectation. We know little or nothing of the common flowers among the ancients; but as violets in general have their due mention among the poets that have come down to us, it is to be concluded that the Heart's-ease could not miss its particular admiration, — if indeed it existed among them in its perfection. The modern Latin name for it is flos Jovis, or Jove's flower, — an appellation rather too worshipful for its little sparkling delicacy, and more suitable to the greatness of an hydrangea or to the diadems of a rhododendron.

'Quæque per irriguas quærenda Sisymbria valles
Crescunt, nectendis cum myrto nata coronis;
Flosque Jovis varius, folii tricoloris, et ipsi
Par violæ, nulloque tamen spectatus odore.'

Rapini Hortorum, lib. i.

With all the beauties in the vallies bred,
Wild mint, that's born with myrtle crowns to wed,
And Jove's own flower, that shares the violet's pride,
Its want of scent with triple charm supplied.

"The name given it by the Italians is flammola, the little flame;—at least, this is an appellation with which I have met, and it is quite in the taste of that ardent people. The French are perfectly aimable with theirs:—they call it pensee, a thought, from which comes our word Pansy:—

"'There's rosemary,' says poor Ophelia; 'that's for remembrance; — pray you, love, remember; — and there is pansies, — that's for thoughts.' Drayton, in his world of luxuries, the Muse's Elysium, where he fairly stifles you with sweets, has given, under this name of it,

a very brilliant image of its effect in a wreath of flowers; - the nymph says,

> ' Here damask roses, white and red, Out of my lap first take I, Which still shall run along the thread; My chiefest flow'r this makes I. Amongst these roses in a row, Next place I pinks in plenty, These double-daisies then for show; And will not this be dainty? The pretty pansy then I'll tye, Like stones some chain enchasing ; The next to them, their near ally, The purple violet placing."

NYMPHAL, 5th.

"Milton, in his fine way, gives us a picture in a word, - "the pansy freak'd with jet."

"Another of its names is Love-in Idleness, under which it has been again celebrated by Shakspeare, to whom we must always return, for anything and for everything; - his fairies make potent use of it in the Midsummer-Night's Dream. The whole passage is full of such exquisite fancies, mixed with such noble expressions and fine suggestions of sentiment, that I will indulge myself, and lay it before the reader at once, that he may not interrupt himself in his chair :-

OBERON. My gentle Puck, come hither: -- thou rememberest, Since once I sat upon a promontory, And heard a mermaid, on a dolphin's back, Uttering such dulcet and harmonious breath, That the rude sea grew civil at her song, And certain stars shot madly from their spheres To hear the sea-maid's music?

Puck.

I remember.

OBERON. That very time I saw (but thou couldst not,) Flying betwixt the cold earth and the moon, Cupid all arm'd: - a certain aim he took At a fair vestal, throned by the west, And loosed his love-shaft smartly from his bow, As it should pierce a hundred thousand hearts: But I might see young Cupid's fiery shaft

Quench'd in the chaste beams of the watery moon;
And the imperial votaress pass'd on,
In maiden meditation, fancy free.
Yet mark'd I where the bolt of Cupid fell:
It fell upon a little western flower,—
Before, milk-white, — now purple with love's wound,—
And maidens call it Love-in-idleness.
Fetch me that flower,—the herb I show'd thee once:

The juice of it, on sleeping eyelids laid,
Will make or man or woman madly dote
Upon the next live creature that it sees.
Fetch me that herb; and be thou here again
Ere the leviathan can swim a league.

Puck. I'll put a girdle round about the earth In forty minutes.

Act H. Sc. 2.

"Besides these names of Love-in-idleness, Pansy, Heart's-ease, and Jump-up-and-kiss-me, the tri-coloured violet is called also, in various country places, the herb Trinity, Three-faces-under-a-hood, Kiss-me-behind-the-garden-gate, and Cuddle-me-to-you, which seems to have been altered by some nice apprehension into the less vivacious request of Cull-me-to-you.

"In short, the Persians themselves have not a greater number of fond appellations for the rose, than the people of Europe for the Heart's-ease. For my part, to whom gaiety and companionship are more than ordinarily welcome on many accounts, I cannot but speak with gratitude of this little flower,—one of many with which fair and dear friends have adorned my prison-house, and the one which outlasted all the rest."

Mr Hunt again mentions this flower with great praise in his Descent of Liberty; where, after sketching in vivid colors a number of beautiful flowers, he thus finishes the floral picture:

"And as proud as all of them Bound in one, the garden's gem, Heart's-ease, like a gallant bold, In his cloth of purple and gold."

In his enumeration of the flowers in blossom, in his History of the Months, too fond of the Heart's-ease even to name it without a passing commendation, he calls it the Sparkler; a name which it so truly deserves, that it might well be added to those it now bears; in which it already surpasses a Spanish grandee.

Herrick plays upon its name of Heart's-ease;

"Ah, cruel love, must I endure
Thy many scorns, and find no cure?
Say, are thy medicines made to be
Helps to all others but to me?

I'll leave thee, and to pansies come; Comforts you'll afford me some: You can ease my heart, and do What love could ne'er be brought unto."

If the poet means to play upon the word pansies also, he was surely singularly fortunate, that when love frowned upon him, his thoughts should give him so much comfort. He tells us the origin of another of its names:

"It was at the noon-tide hour
A lady reposed in a bower,
Where shaded between
The branches of green,
Blossomed and blushed a fair flower;
Not a pinion was moved, nor a breeze was heard,
As with curious hand the lady stirred
The leaves of this unknown flower.

She saw in its cradling bloom
A cherub with folding plume,
And a bow unstrung,
And arrows, were flung
O'er the cup of this opening flower:
And the lady fancied she much had need
Of the light of wakening eyes to read
The name of this unknown flower.

She placed it too soon to her breast,

And the cherub was charmed from his rest;

Then he winged a dart

At the lady's heart,

From the leaves of this treacherous flower.

Ah, cruel child! said the lady; I guess,

Too late, that Love-In-Idleness

Is the name of this unknown flower."

Spenser includes the Heart's-ease among the flowers to be strown before Queen Elizabeth;

"Bring hither the pink and purple columbine,
With gilliflowers;
Bring coronations and sops-in-wine,
Worn of paramours.

Strow me the ground with daffadowndillies,
And cowslips and king-cups, and loved lilies;
The pretty pawnce,
And the chevisaunce,
Shall match with the fair floure-de-lice."

Pansies make a part of the wreaths brought by the grateful shepherds to the nymph Sabrina,

"That with moist curb sways the smooth Severn stream.

\* \* \* \* \* \* \* \*

the shepherds at their festivals
Carol her goodness, loud in rustic lays,
And throw sweet garland wreaths into her stream
Of pansies, pinks, and gaudy daffodils."

"The delicacy of its texture, and the vivacity of its purple, are inimitable," says the Countess, in le Spectacle de la Nature. "The softest velvet, if set in competition with this flower, would appear to the eye as coarse as canvass."

Yet, in another part of this work, the same flower is represented as an humble one which makes no figure, but diffuses an agreeable odor.

It has already been observed, that only the larger kinds have any scent; thus many persons, judging from the smaller, have thought them all scentless. The difference of opinion on this point may be seen in several of the above quotations.

Dryden, in his translation of a passage in Virgil's Pastorals where the poet speaks of sweet herbs in general, introduces the Pansy; but expressly to distinguish it from a fragrant plant:

"Pansies to please the sight, and cassia sweet to smell."

There is a species of Heart's-ease called the Great Flowering — a native of Switzerland, Dauphiny, Silesia, and the Pyrenees —

which is very similar to the common kind, but that it has more yellow in it; and another, called the Yellow Mountain Heart's-ease, of British growth, which, notwithstanding the name it bears, is as often purple and yellow, or even purple alone, as all yellow.

It would be an impertinence to attempt to describe the Heart's-ease; therefore let us proceed at once to the treatment of this little favorite. The roots may be purchased so cheaply, and the flowers of these will be so much finer than any that are sown at home, that this will be much the best way of procuring them. At a nursery, or at Covent Garden flower-market, six or more may be had for a shilling, all of them covered with flowers and buds. They love the sun, but must be liberally watered every evening to replenish the moisture, which it will consume.

It is said somewhere that the Heart's-ease is sacred to Saint Valentine. It must be confessed to be a choice worthy of that amiable and very popular saint; for the flower, like love, is painted in the most brilliant colors, is full of sweet names, and grows alike in the humblest as well as the richest soils. Another point of resemblance, too, may be added, that where once it has taken root, it so pertinaciously perpetuates itself, that it is almost impossible to eradicate it. The poet Herrick tells us, too, that

"Frolic virgins once these were,
Over-loving, living here;
Being here their ends denied,
Ran for sweethearts mad, and died.
Love, in pity of their tears,
And their loss in blooming years,
For their restless here-spent hours,
Gave them heart's-ease turned to flowers."

Flora Domestica.

### ART. VIII. — Culture of the Bletia Tankervilliæ. By Mr PARKIN.

THE Bletia Tankervilliæ, one of the many beautiful productions of China, is an old inhabitant of British stoves, we, nevertheless, frequently witness unsuccessful attempts to cultivate this plant, so as to insure a fine show of its singular and beautiful flowers. When

properly managed, few plants present a more gay appearance when in flower; we have here one plant in a pot, twelve inches in diameter, which, in November last, threw up nine stems, each of which continued for three months to unfold a succession of its lovely flowers; we, therefore, flatter ourselves, that we have been tolerably successful, and consequently, venture to offer for the consideration of your readers and inquirers a few observations thereon; not, however, presuming to have it thought, that no other method would be equally successful. The plant in question, is one with many others (when growing in the limited space of a flower pot) that may be greatly injured by being overabundantly watered; any plants producing abundance of roots, naturally suggest the idea of requiring abundance of food: but here it becomes the duty of the cultivator to enquire, what that food should be .- Water, is with undoubted propriety considered to be the medium through which plants are supplied with food, and is generally applied with a liberal hand, to such as are provided with abundance of roots; with the Bletia Tankervilliæ, we may easily err; for although, as long as the soil is open and the pots well drained, a liberal supply of this element may be required, yet when the plants have attained about the maximum of their growth, the pots will have become crowded with roots to such a degree, as will very materially interrupt the passage of water through them; such being the case, water more sparingly, so as not to keep the roots in a constant state of saturation, and on the other hand, not suffering them to become absolutely dry; for though the plant is so tenacious of life as to be able to live for a considerable time, in either of those extremes, to succeed creditably both must The compost we use, consists of equal parts of brown strong loam, peat, and leaf mould, with a moderate portion of broken pot; potting is regulated by the season of flowering, and may be performed immediately after the flowers are gone, when they are potted with balls entire; but when the plants are to be divided, it is better deferred until the young offsets have emitted their roots a few inches, they may then be carefully separated from the parent, and potted in pots of a smaller size. We have recovered unhealthy plants, by shaking them out of the pot, and washing every particle of soil from the roots, repotting them in the compost above named. -Florieult, Cab.

### ART. IX .- Calls at Gardens in the Vicinity of Boston.

#### MR S. WALKER'S, ROXBURY.

TULIP SHOW.—Mr Walker has, at much expense and pains, got up a Tulip Show for which he merits the highest praise of the amateur florist, and all who are fond of flowers. It is the first exhibition among us, and it is hoped not the last. Why may we not have shows of flowers, as well as of every thing else? There is certainly nothing in them injurious to morals as in too many exhibitions, but on the contrary, something to improve. Let us have, then, more frequent displays of the kind; and it is to be hoped that in this instance such encouragement will be given, that we shall hereafter, have public exhibitions of florist's flowers of every description.

We have all heard of the great value attached to some of the varieties of the tulip in ages past; we have read that \$10,000 have been refused for a single root, and no doubt some of us have had the curiosity to see flowers so highly estimated. The "tulip mania," like many speculations, almost equally ridiculous, in our own time, has passed away, leaving us to wonder at the folly of those engaged in it; but still the tulip is much prized, and some of the finer sorts are rated at a high price. The tulip, "Louis XIV.," stands highest priced in the Dutch catalogue, being marked at 120 guilders or about \$60. This we were shown in Mr Walker's bed, but as it had not come fully into flower, could not judge of its merits. We noticed many very splendid tulips, and felt highly gratified with the exhibition. We can convey no correct idea to our readers by description without the aid of the artist, and will not therefore attempt it; they are things not to be described: they must be seen to have a just estimate of their beauty. To protect from heavy rains and high winds, and shade from the scorching sun, Mr Walker has erected a neat house 60 feet by 12. The top as well as the sides half way down is covered with canvass, which is rolled up or let down according to the state of the weather by means of cords and pulleys. The lower part of the sides is finished with neat green lattice work, forming a fine contrast with the white canvass. The bed of tulips is in the centre of the house, containing 100 rows with seven bulbs in each row; embracing about 200 varieties.

We found in the garden, among other beautiful flowers, the fin-

est collection of pansies we have ever seen; many of the varieties will compare well, with some of the fine sorts we have seen figured in the English periodicals; one called the "village maid," is very superior, with some other named sorts. These have mostly been raised from seed by the proprietor.

### GARDEN OF MR THOMAS WILLOT, ROXBURY.

MR WILLOT has taken the well known garden and green houses of Mr Lemist, for the purpose of supplying bouquets, fruit, plants, &c. It contains a choice collection of green house and other plants, which will afford bouquets in abundance at all seasons of the year, and what is more desirable to the epicure, a profusion of the finest grapes. One house, 70 feet long, is almost entirely devoted to grapes; the vines are very heavily laden with their rich clusters: we were informed that some of them would be fit for the table by the fourth of July; they appeared in remarkably healthful and flourishing condition.

Another house, of about the same dimensions, is devoted mostly to flowers. In this building we noticed a magnificent orange tree, with more than 200 of its large golden fruit. The collection of roses is not large but embraces some of the finest varieties cultivated. We had not time to take a close survey of the plants, but hope hereafter to give some account of them.

A third house, about 100 feet long, divided into two compartments, and finished in fine style, was erected the last season, to be devoted principally, to grapes. The young vines are in flourishing condition.

The appearance of the whole establishment, in the houses and open grounds gives good evidence of the industry and skill of Mr Willot, and we hope he will receive that patronage from the public which he merits.

## GARDEN OF MARSHALL P. WILDER, Esq., HAWTHORN GROVE, DORCHESTER.

WE spent a few moments in admiring the splendid bed of tulips which this gentleman possesses. It contains 210 of the choicest varieties that could be obtained in England, and bloomed for the first time in this country the last season. It is probably one of the best

collections in America. Mr Wilder has not taken any particular pains in their cultivation, nor the precaution to shade them this year, yet we think the flowers generally are more perfect in their coloring than they were the last season. How Mr Wilder's and Walker's tulip beds compare with those in England, we have not the means to judge, but we cannot well conceive of their being much superior in that country. It was remarked, however, by a person who has seen some of the best collections in Europe, that the tulip does not come to that perfection here that it does in England—probably owing to our extremes of heat and cold. The tulip requiring a moderate, even temperature. Our powerful sun spoils the tulip, causing the colors to run, sometimes before the flower fully expands.

One of the most striking flowers in the open ground is the pansy; we found them here in great perfection, mostly seedlings, raised by Mr Wilder: some of them extra fine. We had not time to give but a passing glance at the numerous fine plants in this collection—we found the camellias had made a vigorous growth, and their foliage very luxuriant.

J. B.

# ART. X.—List of New and Rare Plants. Noticed since our last. From Foreign Works.

- 1. Cratægus flava, var. Lobata. Rough barked Thorn, single fruited variety. Natural Order, Roseaceæ; Class, Icosandria; Order, Pentagynia. The original species produces its fruit in clusters, but in the present variety they are solitary. They are of a greenish yellow, slightly tinged with pale red at the end. The plant forms a compact spreading head. The bark splits very much like that of an elm tree. Cratægus, from Kratos, strength, alluding to the density of the wood.
- 2. Cratægus oxyacantha, Var. Oliveriana.—Hairy-leaved Black Hawthorn This variety of the common Hawthorn very much resembles the original species. Its berries are produced in large clusters, but are of a sloe-black color, producing a pretty appearance. It is stated that the plant is a native of Asia Minor.
- 3. Gaillardia bicolor, Var. Drummondii integerrima.—Two colored Gaillardia. Drummond's entire leaved variety. Compositæ; Syngenesia; Frustranea. This variety appears identical with Gail.

lardia picta, excepting all the leaves being entire. The fine large blossoms, more than two inches across, the large crimson disk, surrounded by a ray of fine yellow, produces a very showy appearance, and renders the plant well deserving a place in every flower garden. Gaillardi, in compliment to M. Gaillard de Marentonneau, an amateur botanist.

- 4. Hippeastrum brevistorum.—Short flowered Knight's Star Lily. Amaryllideæ; Hexandria; Monogynia. Mr Tweedie found this very distinct species in the neighborhood of Buenos Ayres. The scape rises about three feet high, bearing an umbel of six handsome flowers. Each flower is about four inches across, white striated with red, and down the middle of the petal, at its lower part, is a stripe of yellow. It is a very handsome species, and well merits a place in every collection of liliaceous stove plants. It has bloomed at the Glasgow Botanic Garden.
- 5. Lachenalia glaucina.—Glaucous flowered. Asphodeleæ: Hexandria; Monogynia. This very handsome species has been sent by Baron Ludwig from Cape of Good Hope to the Glasgow Botanic Garden. The scape rises near a foot high, producing a spike of numerous flowers. They are at first of a palish blue, changing, however, as they become older, to a rosy lilac. The perianth (calyx) is also colored, and prettily spotted with blue. There are two varieties of this plant, one having pale blue flowers, and plain leaves; the other having lilac or rose colored flowers, and spotted leaves. Lachenalia, in compliment to W. de la Chenal, a Botanical author.
- 6. Limnanthus douglassii.—Mr Douglas's Limnanthes. Limnantheæ; Decandria; Monogynia. A native of California, from whence it was sent by Mr Douglas. The plant is annual, quite hardy, decumbent, stems growing ten or twelve inches long. The ends are crowded with numerous fragrant flowers, each about an inch across, much resembling in size and form the Nemophila grandiflora. A large portion of the flower is a deep yellow, the extremities of the petals being white. It blooms from June to August. Limnanthes, from lumen, a lake; and anthos, a flower. The plant, probably, in its native habits growing by the sides of lakes, rivers, &c.
- 7. Lobelia cardinalis; var. Milleri.—Mr Miller's Lobelia. Lobeliaceæ. Pentandria; Monogynia. A very handsome flowering variety, raised by Mr Evans, gardener to Mrs Batt, Newhall, Salis-

bury, Wiltshire. It is an hybrid between L. cardinalis and L. syphilitica. The plant is perennial, quite hardy, blooming from July to the end of the summer season. The stem rises three feet high, having a long raceme of flowers, of a lively purple color, darker up the centre of the petals. The plant deserves a place in every collection. Plants may be had at the public Nurseries. A number of very fine flowering hybrid Lobelias have recently been raised, and will be offered to the public this spring. They are highly ornamental, and great acquisitions to the flower garden. Lobelia, in compliment to M. Lobel, a celebrated botanical author and physician; he died in 1616.

- 8. Lobelia polyphylla.—Many-leaved. A native of Valparaiso, from whence it has been recently sent to this country, and bloomed in the Glasgow Botanic Garden. Mr Knight, of Chelsea, also possesses plants of this species. The plant is perennial, suffruticose, growing a foot high, branching, each producing a terminal raceme of flowers, of a deep blood purple color, producing a beautiful appearance. The plant ought to be in every flower garden.
- 9. Menonvillea filifolia, Three-leaved.—Crucifera. Tetradynamia; Siliculosa. A hardy annual plant, a native of Chile, from whence it appears to have been sent to the Imperial Botanic Garden, at St Petersburgh, and from thence sent to A. B. Lambert, Esq. Boyton House, Wiltshire, where it bloomed the last summer. The stems grow erect, about a foot high, each terminating in a long-ish raceme of flowers. The flowers are small, having very narrow petals, white. There are several other species of this genus, all natives of Chile. Menonvillea, in compliment to M. Thiery Menonville, an enterprising naturalist of France.
- 10. Muscaria commutatum.—Dark Purple Flowered Grape Hyacinth. A native of Italy and Sicily, where it grows frequent in the meadows. The flowers are produced in dense racemes about twenty in each, of a dark purple color. It is grown in the gardens of the Hon. W. T. H. Fox, Strangways, Abbotsbury Castle in Dorsetshire. The plant blooms in March and April. The flowers are scentless. Muscaria, from moschos, alluding to the order of the type.
- 11. Nepenthus distillatoria.—Distilling Pitcher Plant. This very singular plant is a native of the East Indies, and was introduced into this country in 1789. It was subsequently lost, but the late Dr Carey

gathered seeds of it near Bengal, on the Cirear Mountains, who sent some to Mr Cooper, of Wentworth. A very fine plant is now growing in the stove at Chatsworth, which has near fifty pitchers upon it. The plant has bloomed for eighteen months past. The flowers, which are numerous, are produced upon a raceme of eight or nine inches long.

- 12. Oncidium lunatum, Crescent-lipped.—Orchidaceæ. Gynandria; Monandria. This very neat flowering species bloomed in the collection of Messrs Loddiges', during the last summer. It is a native of Demarara. The spike rises about nine inches high. The flowers very much resemble those of O. Harrisoneanum. Each is about three quarters of an inch across. The labellum is white striped, with dark blood color. The other portion of the flower is yellow, spotted with brownish red.
- 13. Pereskia aculeata.—West India Goosberry. Cactaceæ; Icosandia; Monogynia; Synonym, Cactus Pereskia. This plant is an old inhabitant of our hot-houses, but seldom seen in bloom, often used as a stock, on which other kinds are inarched or grafted. The plant produces its flowers in a panicle of ten or more upon each. They are white, rather more than an inch across, and make a very pretty appearance. A fruit is produced much like a soft mellow Gooseberry. Pereskia, from N. F. Peireskin's, an amateur botanist.
- 14. Spiranthus bracteosa.—Long Bracted Lady's Traces. Orchidaceæ; Gynandria; Monandria. A stove herbaceous species of Orchideæ, belonging to the division Neottieæ. It was sent to Messss Loddiges' from St Catharines. The scape rises about a foot high, terminating in a spike of flowers. They are very small, of a pale yellow color. Spiranthes, alluding to the spiral manner that the flowers are produced in.
- 15. Tropæolum brachyseras. Short Spurred Indian Cross. We have already given some particulars respecting this pretty little plant, under the specific name Brachysema, which, by some mistake, we had so inserted it. It appears the proper specific title is now given. We introduce it in this place to correct the mistake.
- 16. Tulbaghia violacea.—Violet flowered. Liliacæ; Hoxandria; Monogynia. A native of Southern Africa. The scape rises about a foot high, producing an umbel of eight or nine flowers, of

a bright shining purple color. Each flower is about three quarters of an inch across. *Tulbaghia*, in compliment to M. Tulbagh, a Dutch Governor.

17. Begonia octopetala, eight petaled. Natural order, Begoniacæ. Linnæan class Monæcia. Order, Polyandrias. This is by far the finest flowering species that has yet been introduced into this country, the flowers are as large as those of a single Anemone; it was sent from Lima in 1835, by J. McLean, Esq., to the Botanic Garden, at Glasgow, where, in the hot-house, it bloomed in October and November, of 1836. It requires a very high temperature to bloom well. The root is tuberous, the plant does not produce a stem. The leaves are upon long foot-stalks a foot and a half long, the leaf is eight or ten inches long, cordate. The flowers are produced in corymbs, of a greenish-white color: the male blossoms are larger than the female: each of the former are two inches, or more across. Begonia, in compliment to M. Begon, a French promoter of Botany.

18. Bolbophyllum barbigerum. Bearded flowered. Orchidaceæ. Gynandria Monandria. A most singularly pretty flowering Orchideous Epiphyte Plant, which has bloomed in the collection of Messrs. Loddiges, at llackney, in whose collection it bloomed during the last year; it was introduced from Sierra Leone. The flowers are produced upon a raceme of six inches in length, upon each are from sixteen to twenty flowers; the petals are very minute, scarcely perceptible; the lip is long, narrow, flexuose, closely covered with a vellow felt, within its point there is a deep purple beard of very fine hairs, and on the under side is another such beard of fine hairs; at the end of the lip is a purple brush of threads, which by a current of air, waving about, produce a graceful and pretty effect; the lip, with its yellow felt, purple brushes, and two beards, is jointed so delicately that a very slight breath produces a rocking movement, which makes it appear as if some animal nature was possessed by the plant: the flower is a most extraordinary production. Loddiges have another species of similarly curious habits. plant has something of the appearance of a small kind of Oncidium. Bolbophyllum, from bolbos, a bulb, and phyllum, a leaf; alluding to the leaves arising from a bulb-like stem.

19. Cratagus flava, Rough-barked Thorn, Roseaceæ. Icosandria Pentagynia. The single fruited variety was noticed last month, the present species bears its fruit in clusters of three or four berries upon each, they are of a greenish-yellow.

- 20. Chysis aurea, Golden flowered. Orchidaceæ. Gynandria Monandria. Another splendid flowering species of Orchideous Epiphyte, which has been introduced into this country by Mr Lowe, of Clapton, in 1835; it was collected by Mr Henchman, in the valley of Cumancoa, in Venezuela. Mr H. describes it as growing suspended by long fibrous roots, from the lateral branches of trees, so that its pseudo-bulbs hanging pendulous wave in the wind, and produces a spike of ten flowers. Mr. Bateman of Knypersley, has a plant of it which has grown very rapidly suspended from a rafter in a pot, planted in turfy-peat and broken potsherds. The stems are in structure very like those of a Cyrtopodium or Catasetum, but its real affinity is to the genus Epidendrum and its section. The flowers are very showy, each about an inch and a half across, the sepals are white at the lower part, of a golden-yellow. Labellum, white, with deep red veined stripes. Petals same color as the sepals. Chysis from chusis, a melting. The pollen masses being as it were fused together.
- 21. Delphinum montanum, Mountain Larkspur. Ranunculaceæ. Polyandria Trigynia. Sinonym. D. elatum. D. hirsutum. One of the handsomest flowering species, a native of the Alps of Europe. It is a hardy perennial, flowering from August to October: growing from five to seven feet high. The plant is covered with softgreen down, and the flowers are of a pale sky-blue, slightly tinged with purple. This is an old inhabitant of our gardens, but, we have given these particulars in order, that our readers who may possess the kind and not know its real name, may be able to do so.
- 22. Daviesia ulcinia, Furze-like. Leguminose. Decandria Monogynia. A very neat and handsome flowering greenhouse plant, a native of New Holland, it well deserves a place in every collection. The plant forms a very neat bush; the flowers are produced in vast profusion, and are very neat and pretty, much resembling, but a little larger, than those of the Eutaxia Myrtifolia. They are produced from April to June, and they are of a bright yellow with red centre. Daviesia so named in compliment to Rev. Hugh Davies, F. L. S., a celebrated Botanist in Wales.
- 23. Epidendrum chloroluceum, Green and White flowered. Orchidaceæ. Gynandria Monandria. This new species has bloomed in 30

the collection of John Allcard, Esq., in September, 1836, and by that gentleman imported from Demerara; the flowers are rather uninteresting in appearance; they are produced on a raceme of eight or ten upon each, about three quarters of an inch across; they are without scent; sepals and petals green; lip white. Epidendrum from epi, upon; and dendron, a tree.

- 24. Euphorbia fulgens, Fulgent flowered. Ephorbiaceæ. Dodecandria Prigynia. This very neat and handsome flowering plant is a native of Mexico, and has recently been introduced into this country. It has bloomed in the select collection of Lucombe, Price, &c., Exeter Nursery. It is an elegant ornamental Stove Plant; branched upright, leafy, growing freely, and blooming profusely; the leaves at the end of the shoots are of a pinkish purple color at the underside, and of a dark green above; the older leaves wholly of a green color; the flowers are produced in groups of three or four together in constant succession along the shoots; each flower is near half an inch across, of a bright red color with a small yellow tube. The brilliancy of the flowers, their vast profusion, and elegance of the plant, render it a very desirable, and which ought to be in every collection of hot house plants. It propagates very easily, and grows rapidly. Euphorbia, so named in compliment to Euphorbus, a physician to Juba, King of Mauritania, and who is said to have first used the plant in medicine.
- 25. Gesneria sellowi, Dr Sellows Gesneira, Gesnerieæ. Didynamia. Angiospermia. This very elegant flowering stove plant has been introduced into this country from the Brazils, and has been specifically named after Mr Sellow, a collector of plants, employed by the Prussian Government. It well deserves to be in every collection of hot house plants. The flowers are produced in a raceme, numerous upon each; of a fine scarlet color. Each flower is about three inches long. Gesneria, in honor of Conrad Gesner, a famous Botanist of Zurich.
- 26. Lissochilus speciosus. Mr Griffin's Showy Lissochilus. Orchidaceæ. Gynandria Monandria. A native of the Cape of Good Hope, from whence it was imported by Mr. Griffin, of South Lambeth, London, in whose collection it has bloomed.—It is one of the terrestrial Orchideæ, which flowers freely from May to August: a hot house of moderate temperature appears to suit the plant best. The flowers are produced upon a scafe rising two neet high, of a fine

yellow color. Each flower is upwards of two inches across. Like this tribe of orchideous plants, the present delights in a rich loamy soil, mixed with peat and sand, the pot to have a good proportion of drainage, care being taken not to have too large a pot.

72. Morna nitida, The beautiful Morna. Asteracæ. Syngensia Polygamia æqualis. Sir James Sterling introduced this neat and pretty flowering plant into this country in 1835, from the Swan River, Australia; where it is found to inhabit the dry parts of the country. It has bloomed in the very select and extensive collection of R. Mangles, Esq., Whitemore Lodge, Sunning Hill, Berkshire. That gentleman exhibited it at the Horticultural Societies' Show, at Cheswick in 1836, and a medal was awarded for it.

It is a neat and delicate plant, producing cymose heads of numerous flowers, each about three quarters of an inch across, of a fine yellow color. They resemble the flowers of Elichrysun bracteatum, but are smaller, and very superior in delicacy and richness. It is a perennial plant, well meriting a place in every collection of herbaceous plants. Morna, so named after *Morna* one of the heroines of the northern romances.—Floricult. Cab. London.

### ART. XI.—Miscellaneous Articles.

ON THE PASSION FLOWER. — As you expressed a wish to receive my small communications, I forward them in time, I hope, for the February number. I am much obliged for your answer respecting the Billiardiera Melocarpa, and hope always to receive so speedy a reply. — "The name Passion Flower is derived from the Latin, "flos passionis," originally given to the plant by the Spaniards, from its supposed resemblance to the instruments of the Crucifixion of our Saviour. When they first discovered America, and found a flower seeming to represent so closely circumstances of so sacred a nature, they attached the most superstitious ideas to it. I have read that, in old botanical works, very curious prints are to be met with, in which the flowers seem to be composed of the things themselves, being evidently portrayed from the exaggerated accounts of the first discoverers, who saw in the five anthers, our Saviour's five wounds;

in the three styles, the nails by which he was fixed to the cross; in the column which rises from the base of the flower, the pillar to which he was bound. The resemblance appeared to the Roman Catholics so strong, that the name of the Passion Flower was bestowed on it; and it is now held in such veneration in South America, that the Nuns train it with very reverential feelings round the windows of their little dormitories." — Flor. Cab.

CURRANTS.—Perhaps there is no fruit that can be raised in New England with greater ease than the Currant. The shrub we believe is never injured by the severest winters; and though the quality of the fruit is improved, and the quantity increased by cultivation, it will grow and flourish in almost any situation, and will take care of itself. But it is subject, after all, to one annoyance, which, so far as our observation extends, is of recent origin, and for which we should be glad to find a remedy. Our current bushes, during the last season, were infested with a set of filthy lice, which injured, and, in some instances, destroyed the fruit, by preventing its ripening. They have made their appearance this season. Their existence is indicated by the leaf turning from its natural lively green to a dull brownish red; before the fruit comes to maturity, the leaves will become yellow and fall from the stem. We know of no method of destroying these noxious vermin, but to pluck off the leaves and burn them; but this affects only those which are thus plucked off. You may strip off every leaf that exhibits this reddish appearance to day, but you will discover others of the same complexion, and from the same cause, to-morrow. The vermin live on the under side of the leaf, and, of course, secure from all processes of washing with a syringe, or any other instrument.

Is there any protection against these villanous and filthy intruders?—Boston Courier.

The Cottage.—"Roses bloomed in the garden—jessamines peeped through its lattices—and the fields about it smiled with the effects of careful cultivation. Lights were seen in the little parlor in the evening, and many a time would the passenger pause by the garden gate, to listen to strains of the sweetest music breathed by choral voices from the cottage. If the mysterious student and his wife were neglected by their neighbors, what cared they? Their endearing and mutual affection made their home a little paradise."—New York Mirror."

A cottage garden, properly cultivated, is full of beauty. Its well formed walks and borders, adorned with fragrant flowers, exhibit a gorgeous display of richness which cannot be surpassed. The English cottager takes a praiseworthy pride in the various species of flowers which adorn his garden, and not unfrequently prizes are awarded to him by horticultural and other Societies, for his skill in bringing to maturity, and presenting the world with improved specimens of floriculture. The study of the vegetable kingdom is also a subject of his earnest solicitude, and the avidity with which he pursues this favorite object is the theme of frequent admiration. The cognomen of "the garden of England" is certainly an appropriate compliment, and it is but justice to remark that we are in a good degree indebted to the skill of the gardeners of our "father land" for many of the beautiful embellishments of our gardens. Our author recites several useful hints on this subject, which I here subjoin:

"Another way in which woman may make her labor extremely profitable is in the management of the garden. She may easily acquire skill and experience, and for my part I think she cannot have a prettier amusement. If there were nothing to be got by it, it is worth a little labor to have the view from your cottage window, ornamented with roses, honey-suckles, stocks, and mignonette, instead of seeing a heap of rubbish, or a slough, or a plantation of thistles or stinging nettles. But, let me tell you there is something to be got by it. If you live near a market town, and have a turn for gardening, I do not know of a better thing for a woman to turn her hand to. If proper pains were taken with a flower bed, (and I know of nothing which yields profit without taking pains, except it be money in the funds, and the likely way to have that, is by taking pains to produce it,) a flower bed well managed, will furnish you (besides supplying your bees, which, under such favorable circumstances, you will of course keep,) more than half the year with four or six nosegays a week, which may be sold to advantage. Suppose they bring you but three pence a week all the year round—thirteen shillings-it will buy your husband a new hat, or your child a warm coat. But this is not all-you will save some seeds of your annuals, and more than to stock your garden for the next year. These you will carefully separate and mark, keeping them from frost and rain in the winter, and then, in March or April, when people begin to

think of flower seeds, do them up in penny or two penny packets, and display them for sale. If you sell but two or three shillings worth, they will buy what lazy, shiftless people are distressed for."

—Newark Daily Advertiser.

NEW PLANT IN THE PHARMACOPŒIA. — Mr Foote recently read a paper to the London Medico-Botanical Society on the chimaphila corymbosa, a plant lately admitted into the new edition of the Pharmacopæia (the Pyrola umbellata of Bigelow and others,) long and extensively used in the United States, where it is abundant, chiefly in shady woods. Various virtues are attributed to it, but it appears to be very analagous to uva ursi in its qualities. It is a powerful diuretic, and an infusion, sweetened with sugar, is very serviceable in the stranguary of gonorrhæa. Its diuretic properties also make it very useful in anasarca and other dropsies, and Dr Mitchell has found it valuable in intermittent fever and rheumatism, applied locally. It is also said to relieve toothache. It is generally employed in the form of a strong decoction.—London Lancet.

New Method of Propagating Apple Trees.—A new plan for increasing plantations of apple trees has lately been carried into extensive practice by the horticulturists of Bohemia.—Neither seeds nor grafting is required. The process is to take roots from the choicest sorts, insert them in a potato, and plunge them both into the ground, leaving but an inch or two of the shoot above the surface. The potato nourishes the shoot, while it pushes out roots, and gradually grows up and becomes a beautiful tree, bearing the best fruit it can without requiring to be grafted.

Whatever may be the success of the undertaking, its novelty at least is an inducement to give it a fair trial.—Farmer and Gardener.

Maple Sugar. — Those who have the present year been engaged in the manufacture of maple sugar, have found their labor well rewarded. When the process of making it is properly conducted, the sap of the maple furnishes one of the most delicious sweets in existence, and one which for use is more profitable than any other. To be thus profitable, it should not be grained too coarse and dry, since pure crystals of sugar are nearly as hard as flint, and possess little apparent sweetness, until thoroughly dissolved. Too much of the sugar manufactured from the maple is slovenly made, and imper-

fectly cleansed, and this has a tendency to lessen the value of the article in the market, and in public estimation.

Few are aware of the quantities of this necessary article furnished by our own forests; or the ease with which the supply might in many cases be doubled. What is called the run, was this year short, not occupying more than a fortnight's time in the whole; and as none of the days were warm, so as to cause the sap to sour, no difficulty was experienced in making the whole into sugar of good grain. In common years, the tendency to acidity, where sap is kept a short time, may be entirely corrected by the use of lime, a small quantity of which should be thrown into the reservoirs containing the sap. The sap this year has been uncommonly rich in its saccharine properties, and we have known of several instances, in which from sixty to sixty-five trees, three hundred and fifty pounds of sugar have been made; and the average yield will, it is presumed, not fall short of five pounds to a tree.

The introduction of beet sugar may supersede that of the maple, or the cane, for general use; but we hold it a correct principle of action, that a farmer should rarely, if ever, purchase of others what he can produce on his own farm, and we hope no one will destroy his sugar works, until he has ascertained that the manufacture of beet sugar will succeed in this country. On the contrary, we think the farmer is wise who plants this beautiful and valuable tree, wherever a proper situation or opening presents itself; and there are few places by the road-side, or on the farm, where its presence would be productive of injury. Its value to the farmer and to the State may be inferred from the fact, that the amount of sugar made in the several counties in this State, cannot fall short of twelve millions of pounds, and worth, at ten cents a pound, one million two hundred thousand dollars. Such a saving in expenditure to the country should not be considered as a trifle; and it should be remembered, too, that the labor and time required for making this sugar is called for at a season when it cannot be available for the other labors of the farm. - Genesee Farmer.

To Destroy Slugs, Woodlice, Earwigs, &c. — Take some cabbage leaves, and either put them in a warm oven, or hold them before a fire, until they are soft, then rub them with salted butter, or any kind of fresh dripping, and lay in the places infested.

### QUINCY MARKET.

[Reported for the Horticultural Register.]		
ASPARAGUS, bunch	8	10
APPLES, Baldwins barrel	3 00	
Russets, "	2 25	2 50
Dried, pound	6	7
	1 50	
BEANS, (White,)	2 25	
BANANAS, dozen	37	
COCOANUTS, hundred	1 00	
	6 00	
CARROTS, "	L 50	
CABBAGE, none		
Sprouts, peck	12	
CUCUMBERS, pair	25	50
DANDELIONS, peck	12	
HORSE RADISH, pound	10	12
LETTUCE, head	3	6
	3 00	
ONIONS, bushel	50	
,	3 00	
J *	3 00	
POTATOES, common, bushel	67	75
St Helena, " 1	00	
PEAS, (Green) peck	75	
PICKLES, (Cucumbers,) gallon	37	
Peaches "	50	
NUTS, (Shagbarks,) barrel		
English Walnuts pound	3	5
Filberts, "	3	5
RADISHES, bunch	6	
RUTA BAGA, bushel	75	
RHUBARB, pound	4	6
SQUASHES, West India, "	2	
TURNIPS, English, bushel	75	
WATER MELONS, each	75	

Apples, with the exception of Russets, are getting scarce and out of season. The market appears to be abundantly supplied with Lettuce, Radishes, Asparagus and Rhuberb. The Green Peas quoted above are from the South, and some damaged. Beets, Carrots, Onions, Ruta Baga, &c. are of inferior quality and very few in market. We noticed a few young Beets for greens, also Spinage, Cabbage Sprouts and Dandelions. Rhubarb, an article a few years since hardly known, is now in abundance and at a moderate price. Fine Cucumbers were exhibited in some of the stalls; more attention appears to be paid to the forcing of this vegetable than formerly. The Watermelons and Squashes are from the West Indies.

We have never seen a greater abundance of Pine Apples, or of finer quality, than at the present time. In the stall of Messrs Tombs & Staples, we noticed some gigantic specimens of Pine Apples plants, in barrels, in a growing state, with fruit upon them of remarkable large size—\$2 per plant was asked for some of the finest.

Boston, May 30, 1837.

## MORTICULTURAL REGISTER.

AND

### GARDENER'S MAGAZINE.

JULY 1, 1837.

ART. I .- The Tulip.

For brilliant tints to charm the eye,
What plant can with the Tulip vie?
Yet no delicious scent it yields
To cheer the garden, or the fields,
Vainly in gaudy colors drest,
'Tis rather gazed on than caressed.

The tulip is a native of the Levant, and has been in cultivation nearly three centuries. It may be justly entitled the King of Flowers, for the brilliancy and endless combination of all colors and shades. The varieties of the Tulip are very numerous, and are divided into different classes. Those cultivated in regular beds by amateurs are rose-colored, Bybloemen, and Bizarres. There are a great many beautiful varieties, denominated Parrot Tulips, which have notched petals, and striped or diversified with green; and also some very dwarfish kinds, both single and double, which are generally cultivated in parlors and green-houses.

Mr T. Hogg, of Paddington, near London, has published a work, entitled, "A Treatise on the Cultivation of Florists' flowers," which comprises the Tulip, Carnation, Auricula, Ranunculus, Polyanthus, Dahlia, German China Asters, Seedling Heartsease, and New Annuals. In that work, which is dedicated to Queen Adelaide, the author remarks that the cultivation of the Tulip is one of the most fascinating and pleasing pursuits imaginable, and that when the "Tulip mania has fairly got hold of any one, it sticks to him

like the skin on his back, and remains with him the rest of his life." He instances a Mr Davey, of Chelsea, as being in his seventyfifth year, and in whose breast the fancy of Tulips was so predominant, that in the autumn of 1832 he was induced to part with a hundred sovereigns for one single Tulip, named "Miss Fanny Kemble." Perhaps a better definition of what constitutes the properties of a good Tulip could not be given than a description of this "precious gem, or loveliest of all Tulips;" but, lest my readers should conclude that the old gentleman was in his dotage, I would inform them this favorite bulb was purchased of the executors of the late Mr Clarke, with whom it originated, and that it had not only been the pet of its late owner, but has excited the envy and admiration of all the amateurs who went to view it.

"This precious gem, a Bybloemen Tupil was raised from one of Mr Clark's seedling breeders, and broke into color three years ago; it has produced two offsets since, and is adapted to the second or third row in the bed; the stem is firm and elastic; the foliage full and broad, of a lively green; the cup large, and of the finest form; the white pure, and wholly free from stain; the pencilling on the petals is beautifully marked with black or dark purple, and the feathering uniform and elegant; it preserves its shape to the last, the outer leaves not sinking from the inner; in a word, it is considered the first flower of its cast, and the best that has ever been produced in England.

The article in the work already alluded to, on the cultivation of Tulips alone, occupies ninetysix pages; I therefore, cannot attempt any thing more than abridgment of the author's ideas on some important points. Those of my readers who may desire full information are referred to the work itself, which may be obtained of Mr G. C. Thorburn.

The following description may serve to govern the choice of amateurs: Tulips exhibited at the shows are, in general, classed and distinguished as follows: Flamed Bizarres, Feathered Bizarres, Flamed Bybloemens, Feathered Bybloemens, Flamed Roses, Feathered Roses, and Selfs, or plain colored.

A Bizarre Tulip has a yellow ground, marked with purple or scarlet of different shades; it is called flamed when a broad irregular stripe runs up the middle of the petals, with short abrupt projecting points, branching out on each side; fine narrow lines, called arched and ribbed, often extended, also, from this broad stripe to the extremity of the leaves; the color generally appearing strongest in the inside petals; a Tulip, with this broad colored stripe, which is sometimes called beamed or splashed, is at the same time, frequently feathered also.

It is called feathered when it is without this broad stripe; but yet it may have some narrow lines, joined or detached, running up the centre of the leaf, sometimes branching out and carved towards the top, and sometimes without any spot or line at all; the petals are feathered more or less round the edges or margin, inside and out, the pencilling or feathering is heavy or broad in some, and light or narrow in others, sometimes with breaks or gaps, and sometimes close, and continued all round.

A Bybloemen Tulip has a white ground lined, marked, striped or variegated with violet or purple, only of various shades; and whether feathered or flamed, is distinguished by the same characters and marks which are pointed out and applied to the Bizarred Tulips.

A Rose Tulip is marked or variegated with rose, scarlet, crimson, or cherry color, on a white ground; and the Feathered Rose is to be distinguished from the Flamed by the same rules, as described before; the Rose is very often both feathered and flamed.

A Self, or Plain-colored Tulip, properly so called is either white or yellow, and admits of no farther change; other plain-colored Tulips, whether red or purple, are called breeders, and are hardly worthy of being exhibited. Mr Hogg informs us, that £100 say \$500, judiciously expended at the present time, will give a moderate sized bed that shall contain the greater part of the finest varieties grown; such a bed as £250 would not have purchased twelve or fourteen years ago. To describe minutely the mode of planting a regular bed of Tulips would exceed our limits; suffice it to state that the name of every bulb should be written in a book, and that they should be so classed as to have all the varied colors to show advantageously; to this end, the tallest should be allotted for the middle of the bed, and others in regular gradation, so as to have the most dwarfish on the sides. The bulbs must be covered with good mould, to the depth of three inches from the top of the bulb on the

sides of the bed, and about four inches in the middle. Let a small spoonful of clean drift sand be used around each bulb, and see that the bed be left sufficiently round from the middle to the edges. The beginner must understand that no unsightly tallies, or number sticks, are to distinguish the Tulips; but that he must adopt a sort of ground plan, dividing the whole bed into rows of seven bulbs across; for example, take and write down the names and places of the Tulips in the first row, and continue the same form all through to the other end of the bed.

#### Row 1st

20011 200							
No.	1.	Fenelon,	•				this is a Bybloemen.
	2.	Duchess of Clarence,		•		•	Rose-colored.
	3.	Charlemagne,		٠	•		Bybloemen.
	4.	Louis the Sixteenth,					Bybloemen.

5. Memnon, . . . . . . . . . Bizarre.

6. Volney, . . . . . . . . . . . Bybloemen.

7. Lady Crewe, . . . . . . . Rose-colored.

Good fresh loam, taken from under healthy grass sods, is the most suitable soil for Tulips to grow in; under which should be buried to the depth of a foot about two inches thickness of well rotted cow or horse droppings. The reason for placing the dung so low is, that the fibres may get down to it, (which they will do,) and that the bulbs may not be injured by it, as is apt to be the case if too much dung is used around them. The best time for planting the bulbs, is early in November, and the beds should be made a fortnight previous, in order that the earth may become sufficiently settled. If severe frosts set in after the Tulips show themselves above ground in the spring, some protection should be given; single mats placed over hoop bends answer very well; and at the time of blooming, an awning should be erected over them, sufficient to screen the Tulips from the intense heat of the sun, which awning should be sufficiently spacious to admit of persons walking under, to view the beautiful flowers to the greatest possible advantage. -Bridgman's Gardener's Assistant.

ART. II. Entomology.—By Joseph E. Muse, Cambridge, Md.
To the President of the Agricultural Society at Annapolis.

Dear Sir, — I have long been impressed with the opinion, that no branch of science, perhaps, more deeply interests the practical farmer, than Entomology, and none is generally less regarded. The numerous class of insects that blast the most flattering prospects, are suffered yearly to repeat their ravages, without a serious effort to obviate the evil, and the vast varieties, so useful, are suffered to perish, from the want of knowledge to preserve them. To learn the natural history; to enquire into the habitudes of life; the characters, changes, and metamorphoses, of beings so important, are objects not so frivolous as they may appear to the ostentatious, but superficial observer: it is the only mode rational or practicable, whereby the propagation of the one, and the destruction of the other, may be accomplished.

With these views, I have made repeated experiments in Entomology; and one of the first objects that attracted my attention, was the worm that inhabits the corn, usually called the grub-worm. I had seen a paper on this subject, by Richard Peters, Esq., in which he represents its parent state to be the "scarabæus volvens." This fact I doubted, as Mr Peters had not himself witnessed the experiment reported by him, though he believed the fact, and proposed a remedy founded upon it: I doubted it, because I had seen the scarabœus volvens, in so small a state, as to be almost invisible to the naked eye; upon which the reasoning occurred, that the product of a chrysalis so large, as must necessarily be that of a grub-worm, could not, by analogical inference, be as diminutive as the scarabœus volvens is frequently seen and known to be, and consequently, that Judge Peters was deceived. To come at the fact, I carried into the field a large transparent bottle, which I half filled with earth; upon his earth I deposited about a dozen of the worms, which were then devouring the corn, and gave them corn blades to feed upon. few weeks, or less, perhaps, they disappeared; I searched the earth. and found them chrysalids, enveloped in balls of earth. A considerable time after, I again examined them, and found several of them

matured, and extricated from their envelope; others, a soft and white pupa, with limbs more or less distinctly formed, in various states of progression, and exhibiting unequivocal proof of their origin, and of the impossibility of mistake or deception. These destructive animals belong to their order "coleoptera" of Linnæus having crustaceous elytra, or wing cases, which shut together, and form a longitudinal suture down the back; they are about one quarter of an inch in length, of a shining jet black color, very quick and active in their movements, and are seen in vast numbers under wheat stacks and in wheat yards.

The brief history of this insect is, that its larva, or caterpillar, having fed upon the young corn, descends into the earth about the depth of four inches, where it assumes its state of chrysalis, in which it continues until the first of July, when it becomes metamorphosed into the imago, or parent, which in autumn, deposites its ova in the fields, to undergo a similar series of transitions, which is effected by the heat of the ensuing season.

The obvious preventive is fall or winter ploughing, at such a depth as will turn up and expose to the frost the ova, whereby they must perish.

To prove the efficacy of this method, in December, 1836, a field which I designed for corn, was ploughed four or five inches deep; the following season, my neighbors' corn fields, as well as those of the county generally, were assailed and nearly ruined by this destructive worm, when mine was almost wholly exempt from their annoyance.

Another insect, the "curculio," of which there are nearly one hundred species, belonging also to the coleopterous order, commands, from its universal ravages, upon both the farmer and the fruiterer, the attention of every member of the community, who has it in his power to contribute, in the smallest measure, to the destruction of this ruthless foe to the wealth and luxury of man; which frustrates, by its concealed and wily movements, the most rational and well founded plans, executed by the most ardent and efficient energies of the human mind and body. Are we not inclined to exclaim, with the moral and philosophical Seneca, "Natura quam te colimus inventi quoque." How repugnant to the proud feelings of man, to stoop to combat with this insignificant animalcule! How

resistless are the ordinances of nature, which compel us, by acts so humiliating, to admire and adore that complex creation, whereby the great architect has seen fit to enforce them!

I have made experiments on the larvæ of several specimens of curculiones, and have found the parents so nearly similar in habitat, metamorphoses, and most other circumstances, that one description will suffice for their whole history; at least of those which I have examined; and the only mark of idiocrasy in the tribes which I have observed, consist in their choice of a nidus; selecting, from their peculiarities in this respect alone, the cherry, the plum, or the grain of corn, as their instinctive or innate propensities might incline them.

In a transparent bottle containing some earth, I deposited several cherries, in which were the larvæ of the curculio, that infest that fruit; in a few weeks, or rather as soon as the pulp of the fruit was consumed, which was at different periods, they retreated into the earth, where upon examination some time after, I found they had assumed the state of chrysalis, which shortly resulted in that of the imago or parent; the wings of the insects were not sufficient to accomplish a flight, but merely to assist its ascent of the body of a tree; from which circumstances, I was led to the following reflections and experiments to test their correctness:

That the remedy must be such as would act, physically, to wit—
to interrupt the metamorphoses, by preventing the descent of the
larvæ into the earth; to expose to the weather, the pupa, after its
descent; or to intercept in its ascent of the body of the tree, the
parent insect; or, chemically—by substances, known to be generally deleterious to that class of animals.

The fruit being the nidus of the ovum, and the earth the habitat, in which it is brought to maturity and makes its abode, and the larva, from its soft and delicate structure, incapable of travelling, or sustaining exposure; when the fruit containing the larva has fallen and is rotted and consumed by the insect, the larva must descend, by the most direct route from its original depository, the fruit, into the earth, its permanent abode, there to undergo the metamorphoses, which will bring it to maturity, and fit it for a new series of depredations, which is so secretly performed, that though myriads are employed, they are never detected in executing their work of de-

struction, the deposite of their ova. Hence I concluded, that one of the most effectual preventives, would be paving with brick, stone, shells, or some other hard substance, impervious to the soft larva, a circular space round the fruit tree, as extensive as the fall of the fruit; by which it would be interrupted in its descent in the earth, and consequently perish; or that it might be accomplished, by turning up the earth under the tree to the same extent, and thereby exposing to the inclemency of the weather, the tender pupa, of which two methods, the former is to be preferred; because thereby you arrest the passage of the larva to maturity, and necessarily destroy it. The latter method, if not performed in time, may allow the perfection of the imago, and in this state it is unquestionably more hardy and capable of providing another habitation, as secure and comfortable as that of its first election. And by the experiments which I have made, its descent and maturity are at uncertain and unequal periods, which would make an insuperable difficulty, in point of time, for performing the operation; if before the descent, it would necessarily be useless; if after the maturity, equally so, for reasons given.

This view of the subject has led me, repeatedly, to both experiments, which I have fairly and impartially made without the influence of any prejudice, which it might be presumed, my reasoning had connected with, or in favor of the former; the result was, the fruit with which I made the experiment that had been destroyed by curculiones, for many years, were in all cases, when I paved or shelled entirely exempt; in two cases only, when the earth under the tree was turned up, at different seasons, the fruit escaped injury, but from the number that failed, I was inclined to ascribe these two to causes accidental and extrinsic.

The third method proposed, viz: to intercept the parent in its ascent of the body of the tree, by various obstacles which the mind will readily suggest, and thereby prevent its deposit of ova, though I have made no experiments upon it, I conceive to be rational, and easily accomplished, and with those species of curculiones, of which there are many, whose wings do not admit of flight, but assist them only in climbing, it would undoubtedly be effectual.

The fourth remedy which I propose, of a chemical nature, I have made but partial experiments to establish, such as are not yet satis-

factory or conclusive; when finished, it will give me pleasure to report them, if the result be successful, by a fair and candid detail of facts.

I fear I have already trespassed on your patience, and will venture merely to notice the parent of a singular larva, which some years ago, very generally, throughout the state, as you no doubt remember, threatened to exterminate the whole vegetable creation, as far as it travelled; in whole districts, not a solitary blade of wheat, oats, or rye, nor a remnant escaped its voracious appetite, and the grass was swept, in this march, as if by a scorching fire. So formidable were the destructive multitudes, that fosses, abbatis, and parapets were constructed, to repel their advances, and the ditches were filled with their dead bodies. I deposited in bottles, with earth, several of these larvæ; they shortly went into chrysalis, and came out a fly of the lepidopterous order, precisely like the candlefly, in all respects. This result, I report, because numerous as they were, and as much alarm as they occasioned, I have never seen a notice of a similar experiment; and it may, in case of a return of these hosts of enemies, afford a clew to their destruction. We at least are not averse to know something of an enemy, which has, and may again assail us with more disastrous ravages.

If, sir, the present communication shall have the effect of inciting to inquiry, on these interesting subjects, the enterprising and intelligent farmer—if the plan of research which I have ventured to suggest, shall afford him any assistance—if I have added one ray of light, whereby more may be obtained—my purpose is answered, and my most sanguine expectations fulfilled.

## ART. III .- The Cherry Tree.

This tree was procured and brought into Europe by the overthrow of Mithridates, king of Pontus, when he was driven from his dominions by Lucullus, the Roman general, who found the cherry tree growing in Carasus, a city of Pontus, now called Keresoun, a maritime town belonging to the Turks in Asia, which his army destroyed, and from whence it derived the present name of *cherry*. Lucullus, who was as great an admirer of nature as he was of the arts, thought his tree of so much importance, that when he was granted a triumph, it was placed in the most conspicuous situation among the royal treasures which he obtained from the sacking of the Capitol of Armenia; and we doubt much if there was a more valuable acquisition made to Rome by that war, which is stated by Plutarch to have cost the Armenians one hundred and fiftyfive thousand men: we may justly style it the fruit of the Mithridatic war.

Botany seems to have been as much studied in early times by distinguished persons as at present. In this instance we find the conquered and the conquerer both botanists. Mithridates, whom Cicero considered the greatest monarch that ever sat on a throne, and who had vanquished twentyfour nations whose different languages he had learned, and spoke with the same ease and fluency as his own, found time to write a treatise on botany in the Greek language. His skill in physic is well known; there is even at this day, a celebrated antidote, called Mithridate.

It was in the 68th year, B. C., that Lucullus planted the cherry tree in Italy, and which 'was so well stocked,' says Pliny, 'that in less than twentysix years after, other lands had cherries, even as far as Britain beyond the Ocean.'

Some idea may be formed of the Roman gardens, by the luxurious manner in which Lucullus lived in his retirement from Rome and the public affairs. He had passages dug under the hills, on the coast of Campania, to convey the sea water to his house, and pleasure grounds, where the fishes flocked in such abundance, that what where found at his death sold for more than eight hundred thousand dollars. Pliny mentions eight kinds of cherries as being cultivated in Italy, when he wrote his Natural History, which was A. D. 70. 'The reddest cherries,' says he, 'are called apronia; the blackest, actia; the Cacilian are round. The Julian cherries have a pleasant taste, but are so tender that they must be eaten when gathered, as they will not endure carriage.' The Duracine cherries were esteemed the best, but in Picardy the Portuguese cherries were most admired. The Macedonian cherries grew on dwarf trees; and one kind is mentioned by the above author, which never appeared ripe, having a hue between green, red and black. He mentions a cherry that was grafted, in his time, on a bay tree stock, which circumstance gave it the name of *laurea*; this cherry is described as having an agreeable bitterness. 'The cherry tree could never be made to grow in Egypt,' continues Pliny, 'with all the care and attention of man.'

Lord Bacon has clearly elucidated what the ancients considered the sympathy or antipathy of plants. 'For it is thus,' says this great man, 'wheresoever one plant draweth such a particlar juice out of the earth, as it qualifieth the earth, so that juice which remaineth is fit for the other plant; there the neighborhood doeth good, because the nourishments are contrary or several; but where two plants draw much the same juice, then the neighborhood hurteth; for the one deceiveth the other.'

The cherry, like many other kinds of fruit, has had its sorts so multiplied, by various graftings and sowing the seeds, that we now enjoy a great variety of this agreeable fruit, and for a considerable portion of the summer, as it is one of the first trees that yields its fruit, in return for the care of the gardener. From the ripening of the Kentish and the May Duke to the Yellow Spanish and the Morells, we may reckon full one third of the year that our desserts are furnished with this ornamental fruit; and to those who have the advantage of housed trees, the cherry makes a much earlier appearance, as it is a fruit that bears forcing exceedingly well.

Cherries have ever been found more tempting than wholesome. Pliny says, 'this fruit will loosen and hurt the stomach; but when hung up and dried, has a contrary effect.' He relates, that some authors have affirmed that cherries, eaten fresh from the tree when the morning dew is on them, and the stones being also swallowed, will purge effectually, as to cure those who have the gout in their feet.

The wood of the cherry tree, which is hard and tough, is next to oak for strength, and comes the nearest to mahogany in appearance.

Judiciously planted, the cherry tree is very ornamental in the shrubbery. Its early white blossoms are contrasted with the sombre shades of evergreens in the spring; and its graceful ruby balls give a pleasing variety in the summer.—Naturalist.

## ART. IV .- The Brussa Mulberry.

We are indebted to Mr Rhind, (who negociated the treaty of the United States with Turkey, and was long a resident of the latter country,) for the following extracts which formed part of a correspondence between Mr Rhind and Judge Spencer of New York. Mr Rhind has taken so much interest in this subject and has had such good opportunities to form correct opinions, that his authority deserves to be held in great respect. His favorable opinion of the Brussa mulberry, therefore, offers a sufficient inducement to rear that kind, and to give it a fair trial of comparison with others. But we should at present distrust the seeds, for propagating the same kind, unless it is avowed that they have been tried, and found not to produce other varieties, as is the case with the Morus multicaulis.— Virginia Farmer's Register.

### Extract of a Letter from Mr Rhind to Judge Spencer.

"During the reign of the emperor Justinian, when the two monks were sent by him to Seres to bring from thence the eggs of the silk worm, it is natural to suppose that they would also adopt the precaution to bring with them the seeds of the tree which afforded the pabulum or nourishment for the insects; and it is highly probable that while the hollow cane of one monk carried the eggs of the insect, that of the other carried the seeds of the tree,\* if such was the case, the first mulberry plantations must have been in the vicinity of Constantinople. The country called Seres, by the ancients is generally admitted by modern writers, to be Little Bucharia, and that country is situated in a latitude similar to Brussa, in Asia Minor, not far from Constantinople. This species of the mulberry flourishes best in high and even poor lands; and Brussa, being situated on the rise of Mount Olympus, has a climate and soil closely resembling that of Little Bucharia, and the superior quality of the Brussa silk, over all others, in the markets of Europe, would seem to evince a congeniality of soil and climate. Mount Olympus is perpetually covered with snow, and the basis of the mountain

<sup>\*</sup>Some authors affirm, that the monks first brought the seed of the tree only, and that the emperor sent them back to Seres, for the eggs of the insect.

(near which Brussa is situated,) being in my opinion, more similar to our climate than any other in the latitude, I was induced to select the seed of the Brussa mulberry tree in preference to those of any other place, as one more likely to endure the rigors of our severe winters, and not be so subject to the effect of the frost, as trees brought from more southern latitudes, or warmer climes.

"The leaves of the Morus alba of Brussa are said to contain a much greater quantity of saccharine matter, than any other of the white species, and moreover, the leaf is much larger than those of Italy and Spain; it is also a hardy tree, susceptible of being raised in climates, where the frosts are severe. I therefore believe, that the Morus alba of Turkey, is decidedly the best for our climate, and next to it, those of Italy and Spain; although the latter were, I presume, originally obtained from the east, as we find the culture progressing from Asia, through Greece, Sicily, the Balearic islands, Spain, and Italy, and eventually to the south of France. It is probable that the species has degenerated more or less in those countries, since neither of them produce an article of commerce, equal to that of Brussa, notwithstanding the cultivation and manipulation of silk, in Turkey, is far inferior to that of Italy or France; I consequently attribute the superiority in the quality of the former, to the greater quantity, or richer nature, of the nutritive substance contained in the leaf.

"The Morus multicaulis, although possessing a larger leaf than those of Brussa, does not, I apprehend, contain an equal quantity of nutritive matter. Count Dandolo says, that the leaves of the broad leafed white mulberry, contain but little saccharine matter; and I hence infer that the multicaulis, being of similar species, contain less saccharine matter than the hardy alba of colder climates. In southern latitudes, similar to those of China, where it is said to be cultivated to most advantage, and where frosts are unknown, the multicaulis, may be most suitable; but for our climate, the Morus aloa is decidedly the best and safest. Future experiments will doubtless elicit the comparative excellence of the different species. But since we know that the Brussa Tree is of superior quality, and I have proved that it will endure the severity of our winters, (for the last three were unusually severe, and although young as they were,

not a single tree was lost,) hence they may now be considered as acclimated.

"That silk can be produced with infinitely less trouble than is generally supposed, I am fully persuaded; and I have, in the course of my travels, visited most of the silk growing countries, and gave considerable attention to the subject.

"The culture of silk is peculiarly deserving the encouragement of patriotic and benevolent men, inasmuch as it will afford (in its different manipulations,) a living to the most helpless of our race; aged and decrepit persons, and children, can all be employed in some part of the process, and to a portion of the female sex who may have been reared in luxury and indulgence, but by change of fortune have become reduced, yet are willing to labor, rather than depend on the cold hand of charity, or the benevolence of friends, this culture will afford a certain and independent living, without exposing them to the scoffs and scorns of a selfish world.

"In the city of Brussa containing about 100,000 inhabitants, their principal occupation is the production of silk. When the crop-season commences, the leaves are brought to the city by the cultivators, in baskets, and sold in the market in quantities to suit purchasers, in the same manner as fruits and vegetables. Almost every family when the season begins, clear out the rooms of their dwellings, (reserving one or two apartments to live in) and fill the rest on the floors, with the worm. The women and children chiefly attend to feeding them, and when the worms form the cocoons (generally in about six weeks) they (the women and children) reel the silk, which is then ready for market, and thus in little more than six weeks, they gain sufficient to support their families, (in their simple style of living,) until the next season."

Extract of a Letter from Judge Spencer to Mr Rhind.

"The trees which I received from you [Brussa mulberry, of three years old] indicate great hardihood, and I should think, not only from their not having suffered at the extreme points, and also from Mr Bradish's account of the trees, that they will endure our climate perfectly well; almost every tree has put forth leaves, and they are considerably larger and thicker than the white mulberry leaf. The Brussa leaf is nearly, if not quite equal to the Morus multicaulis."

At the annual fair of the American Institute, at New York, in October last, specimens of the leaves of the Brussa\* tree, of different years' growth, were exhibited, and excited universal approbation, and the Institute awarded a silver medal for the introduction of this invaluable tree, observing in the report of the committee, "that these with every new and useful plant, calculated to withstand the rigors of our climate, are worthy of attention, and those introducing them into our country, deserve to be placed on the catalogue of our country's benefactors."

### ART. V .- Scolytus Destructor.

This insect, which has been so much brought before the notice of the public, from the extensive ravages committed by it on the elm trees in Kensington Gardens and along the western line of road, and for the injudicious means of exterminating which, one of the finest ornaments to the metropolis has nearly been destroyed, has latterly excited a great deal of entomological notice. During the past season, some thousands of trees have been rooted up indiscriminately, but so little effect has been produced that many are still standing which teem with countless larvæ ready again to commence the work of destruction. The disease is known by the bark being separated, and full of erosions made by the female parent, and the larvæ in the inner bark and soft wood, and when these become numerous, they occasion the death of the tree by preventing the ascent and descent of the sap. For a long time the insect eluded notice, and some few years since, the devastation it produced was attributed to other causes, and suspected to have been in many instances the result of malicious injury. Some of the sentinels on duty at St. James's Park were actually apprehended, and an investigation was made which ended in their discharge and the discovery of the cause of mischief. In the year 1825, an avenue of elm trees in Camberwell-grove, were attacked by the disease, which was supposed to be brought on by the gas

<sup>\*</sup> In the publication of the Institute, the word Russia has been erroncously substituted for Brussa-vide the publications of the Institute for November and December, 1836.

which escaped from the pipes laid down along the road, being absorbed by the roots, and which gave rise to a suit in Chancery between the inhabitants and the proprietors of the gas works. The trunks, when examined in 1826, were found to be infested with an immense number of larvæ feeding on the soft inner bark. The insect, as an enemy to elm trees, first attracted the notice of entomologists about the year 1824, soon after which an inquiry was made by competent naturalists under the authority of government.

The female insect commences its injury about July, by boring through the bark, until she has reached the point between the soft wood and inner bark, when she forms in the latter a vertical channel, usually upwards of two inches long, on each side of which she deposites her eggs as she advances, to the number of from 20 to 50. About September the larvæ are hatched, when they commence feeding upon the matter of the inner bark, at the edge of the channel, and in a very slight degree on that of the soft wood opposite, advancing as they feed, in a course of about right angles from the primary channel and on each side of it. When the larva has finished its course of feeding, it stops in its progress, turns to a pupa, and then to a beetle; after which it gnaws a straight hole through the bark and comes out. The beetles come out about the latter end of May, in the year following that in which the eggs are deposited; the sexes afterwards pair, and the female, bearing eggs, bores through the bark, and so on from generation to generation, and from year to year.

The infested trees may be easily recognized, as the bark will be found perforated by small holes, as if made by a shot or brad awl, in several parts, whilst small particles like saw-dust will be found on the rough surface of the bark, and at the foot of the tree. The Scolyti never attack dead trees; they seldom destroy the trees they attack, the first year that they commence their ravages; and they prefer a tree that they have already begun to devour, to a young and vigorous tree. It is stated, that at least 80,000 have been known to attack a single tree. From observations made, it appears that the females never deposite their eggs in trees perfectly healthy, but that both they and the males pierce young and healthy trees for the purpose of eating the inner bark which constitutes their food, and that the numerous holes they thus cause, partly from the loss of sap which exudes from them, and the absorption of rain which

lodges in them, will bring the trees in which they occur into that incipient state of ill health, in which the females select them for laying their eggs, and that thus healthy trees are effectually destroyed by the combined operations of the *Scolyti* of both sexes, though not solely in consequence of the depositure of the eggs of the female.

The practical directions resulting from a knowledge of the economy of the Scolytus, when there is reason to suspect its presence, are, first to pare away the exterior rough bark with a cooper's spokeshave or other convenient tool, thus admitting of a distinct inspection of the actual state of the trees, which, if having no trace in the inner bark either of small holes in old trees, or those superficial furrows which they make for food in young trees, may be pronounced sound and healthy, and to require no further attention. If the inner bark should exhibit any of these appearances, it is next to be ascertained whether the female has already deposited her eggs in it, and if it contain larvæ, (which may be known by cutting away portions of the bark down to the actual wood,) should their existence be proved, the trees should be cut down, the bark peeled off, and every fragment carefully burnt. Trees which have been merely pierced for food may be carefully branched over with coal tar, the smell of which is highly offensive to the insect, and when this is repeated for a year or two, they are enabled to resume their vigor, and grow healthy. It is thus that a great number of the young elms in the Boulevards at Brussels were brought into an incipient state of debility by the attacks of the Scolyti for food, and though not then attacked by females, were healed last spring, with every prospect of a successful result. In Kensington-gardens, the cutting down of a few trees, and the judicious treatment of others, would, there is every probability, have saved that indiscriminate felling of sound with decayed trees which has taken place, and this metropolitan ornament might have been saved. Not only in London, but in the promenades of the principal cities of the North of Europe, the greater proportion of the fine elms have fallen victims to the ravages of the Scolytus destructor, and it has lately been found necessary to cut down 50,000 young oaks in the Bois de Vincennes near Paris, in consequence of the attacks of another insect of the same tribe, S. Pygmæus.

## ART. VI.—List of New and Rare Plants. From Foreign Works. Noticed since our last.

- 1. Acropera Loddigesii, Mr Loddiges' Acropera. Natural Order, Orchidaceæ. Linnæan Class, Gynandria; Order, Monandria. Synonym; Maxillaria galeata. The flowers of this plant are very singularly handsome; they are produced numerously in large pendant racemes, each flower is about an inch and a half across. Sepals of a pretty brownish-yellow. Lip of the same color. Column, greenish-yellow spotted with red. The plant was introduced into this country by Mr George Loddiges, from Xalapa of Mexico, and has bloomed in Mr Loddiges' collection, and in that of the Glasgow Botanic Garden. It merits a place in every collection of Orchideous Epiphytes. Acropera, from akros, the extremity, and pera, beyond, alluding to the little saccate appendage at the tip of the Labellum.
- 2. Anagallis Monelli, Var. Celacina. Lilac flowered Italian Pimpernel. Primulaceæ. Pentandria Monogynia. This very handsome flowering variety has been raised between A. Monelli and A. Fruticosa. It has flowered in the collection of the Hon. W. T. H. F. Strangways, Abbotsbury Castle, Dorsetshire. The flowers are of a rosy, lilac color, about the size of A. fruticosa. It is a very pleasing variety, well meriting a place in every collection. This as well as its parents are very beautiful flowering plants for a bed in the flower garden during summer, where they make a most brilliant display. Botanists, in general, seem now agreed, that the A. Monelli and A. Grandiflora are nothing more than mere varieties. Anagallis, from anageleo, to laugh, applied by the ancient Greeks to a plant beneficial in diseases of the liver.
- 3. Begonia Monoptera. Single Winged. Begoniaceæ. Menæcia Polyandria. Mr Otto, of the Royal Berlin Garden, has most obligingly sent over to this country several highly interesting, and ornamental species of Begonia. The present species is very handsome. The flowers are white, produced numerously in a terminal raceme. The stems and leaf stalks are of a light red color, as is the under side of the leaves. The plant is a native of Brazil, from whence it was sent by Mr Deppe. Begonia in compliment to M. Begon.

- 4. Cereus serpentinus. Serpent-like. Cacteæ. Icosandria, Monogynia. Mr Mackay of the Norwich Nursery, purchased the very fine collection of succulents formerly belonging to Mr Hitchin, and the present species has bloomed with Mr Mackay. It is a night blooming species, the flowers remaining expanded about as long as C. Grandiflorus. The flowers are of a pale whitish flesh color inside, and a reddish black color outside. The tube is about four inches long. Cereus, from cereus, pliant, alluding to the shoots.
- 5. Ceropegia stapeliiformis. Stapelia-like. Asclepiadeæ. Pentandria Digynia. This most curious flowering plant has bloomed in the Glasgow Botanic Garden, where it had been sent from Kew Gardens. It is thought to be a native of the East Indies, and requires a hothouse temperature. The stems very much resemble those of a Stapelia. The flowers are very singular. Corolla two inches long; tube curved, expanded upwards to form the limb, which is cut into five segments, they are dark purple outside, white and hairy within. The tube is of a greenish white, much spotted with deep purple. The five segments of the corolla curve backwards, and the sides reflexed, so that the upper side having the form of a sharp keel, presenting a most singular appearance. Ceropegia, from keros, wax, and pege, a fountain.
- 6. Chryseis compacta. Dwarf Chryseis. Papaveraceæ. Icosandria Tetragynia. Synonym. Eschscholtzia, compacta. The present species differs from C. crocea, and C. californica, in being of a more dwarf habit, and very compact in growth. The flowers too are rather less: they are of a fine bright yellow, with a deep orange centre. The plant deserves a place in every flower garden. Chryseis, a celebrated Homeric beauty, the name alluding to the gold color of the blossoms.
- 7. Clarkia gauroides. Guara like Clarkia. Onograria. Octandria Monogynia. A hardy annual, sent by the late Mr Douglas from California, to the London Horticultural Society, in whose garden it has bloomed. It is not near so handsome as either C. pulchella, or C. elegans. The flowers are about an inch across, of a lilac-purple color. They are produced on terminal racemes, but the blossoms are very distant from each other, much more so than in C. elegans. Clarkia, in compliment to captain Clark, who accompanied Captain Lewis to the Rocky Mountains.

- 8. Datura guayaquilensis. Guayaquil. Thorn Apple. Solaneæ. Pentandria Monogynia. Mr Tweedie sent seeds of this species from Peru to Dr Neill, in whose fine collection at Cannon Mills, near Edinburgh, it has bloomed. It had been grown in the stove. It appears that it blooms in February and March; in its native country, where it grows abundantly in moist places, on the shores of the Pacific, near Guayaquil. The plant is annual, growing three feet high. The flower, with its tube, is about six inches long; corolla, upper half white, lower part greenish. The mouth of the flower opens about two inches. It is very probable that good strong plants, planted out in the open border during summer, would bloom very freely.
- 9. Delphinium Barlowii. Mr Barlow's Larkspur. Ranunculaceæ. Polyandria Trigynia. This very superior variety was raised by Mr Barlow, near Manchester, some few years back. The splendor of its fine double blossoms, renders it a very desirable plant for every flower garden. It blooms during the greater part of summer, its fine blue flowers tinged with a purplish hue at the centre, produce a most charming effect. The spikes rise from three to seven feet high. The plant may be had of most nurserymen, or florists. Delphinium, from Delphin, a Dolphin, the resemblance of the nectary of the flower.
- 10. Echinocactus sessilistorus. Sessile-flowered. Cacteæ. Icosandria Monogynia. Bloomed in the fine collection of Mr Mackie of the Norwich Nursery. The spines are short and white; the plant blooms freely, producing several blossoms every year. Mr Mackie cultivates the Echinocactus tribe with great success. The plants are grown very near the glass, and in the summer time, in a very high temperature, by keeping the top sashes of the house closed. Strong light and heat are very necessary for the blossoms expanding in perfection. Some of the kinds close their blossoms immediately on being removed to a cooler place. It is very necessary to have the pots well drained, as the roots are liable to decay if the earth is at all sodden with moisture. All the kinds thrive best in a good encircled soil, well drained and planted in small pots.
- 11. Epidendrum diffusum. Spreading Epidendrum. Orchideæ. Gynandria Monandria. A native of Jamaica, where it is a frequent inhabitant of the trunks of trees. It has bloomed in the collection

at the Glasgow Botanic Garden. The flowers are pointed in terminal panicle, six to eight inches, or a foot long, very branched. The flowers are small, little more than half an inch across, very narrow petals, of a light greenish yellow color. The flowers are rather uninteresting. Epidendrum, from epi, upon, and dendrum, a tree, growing upon.

- 12. Gesnera laterita. Brick-red. Gesneraceæ. Dedynamia Angyospermia. The plant is a native of Brazil, and has bloomed in the stove in the garden of the London Horticultural Society. The flowers are of a fine red color, an inch and a half long. Gesnera, in compliment to C. Gesner, a celebrated botanist.
- 13. Lachenalia pallida, Var. Cærulescens. Blue-flowering pallid Lachenalia. A native of the Cape of Good Hope, where it occupies the situation as that of the blue-bells and squills of the European countries. The flower spike is about five inches long, each flower nearly as large as a common blue-bell, of a light-blue color. Lachenalia from —
- 14. Lælia anceps, Var. Barkeriana. Mr Barker's variety. Orchidaceæ, Gynandria Monandria. It is a striking variety of Lælia anceps; it differs however in the petals being much narrower, but much the same size as the sepals. The middle lobe of the lip is narrower and sharper. The sepals and petals are of a beautiful lilac color, much like Cattleya labiata. Each flower is about four inches across. The Labellum is of a dark crimson red color, with the inside white and striped. The plant is a native of Mexico, imported by Messrs Lowe & Co., Clapton Nursery. It has bloomed in the collection of George Barker, Esq. Birmingham.
- 15. Limnanthes Douglassii. Mr Douglas's Limnanthes. Limnantheæ. Decandria Monogynia. This family appears to hold an intermediate station between Geraniaceæ, and Tropæoleæ. It is a hardy annual, thriving best in a soil composed of peat and loam. The stem of the plant rises about nine inches high, branched, flowering freely, each blossom being about an inch and a half across. The lower half of the flower of a bright yellow, the upper half white. Altogether being pretty. Limnanthes, from limen, a lake, and anthos a flower. Alluding to its habits.
- 16. Monochanthi et Myanthi, oristati proles biformis. Orchideæ. Gynandria Triandria. A plant of the Myanthus barbatus

flowered in the fine collection at Chatsworth, and it also produced a perfect spike of Myanthus cristatus at the same time. A vigorous state of culture has a tendency to favor the production of monstrous flowers. A gentleman, who resides in Demerara, states that a flower spike of Gatasetum, often has on it several distinct kinds of flowers. The spike of bloom at Chatsworth had seven flowers of M. cristatus at the upper part of the spike, and seven of M. barbatus below them. The flowers of the former are of a greenish-yellow color, destitute of any spotting with darker. Those of the latter are green spotted with red. The lip has a number of fleshy teeth projecting from the sides and end. Dr Lindley states in remarks on this sportiveness in orchideæ, that "the necessary consequence of this in the case of M. barbatus and cristatus is, that the supposed genera Myanthus and Monachanthus must be restored to catasetum." And Dr Lindley further observes, that, he has no doubt that the genus Mormodes must share the same fate.

17. Nemophila atomaria, Speckled flowered. Hydrophyllacea. Pentandria monogynia. A hardy annual, probably from California. it was introduced into this country the last year. The flowers are about half an inch across, white, with a slight tinge of blue at the centre, and spotted with small lead colored spots. When put in contrast with N. insignis, it is an uninteresting species. Nemophila from nemo a grave; and philo I love, referring to its native habitation.

18. Nuttallia cordata, Heart leaved. Malvaceæ. Monadelphia Polyandria. A native of North America, where it had been collected by the late Mr Drummond; and it appears forwarded to the Glasgow Botanic Garden. It is another pretty addition to this handsome genus. The flowers are of a pretty blush color, each an inch and a half across. It well deserves a place in every flower border. Nuttallia, in compliment to Mr Thomas Nuttall, a writer on Botany in North America.

19. Oncidium Cebolleta. Round-leaved. Orchideæ. Gynandria Monandria. Synonyms Epidendrum Cabolleta. Epidendrum junccifolium. Orcidium juncifolium. Cymbidium juncifolium. Dr Sir W. J. Hooker observes, "that, I am not aware that the flowers had been seen in this country, till a fine panicle appeared in the stove of the Glasgow Botanic Garden, and another plant blooming in the

collection of Charles Horsfall, Esq., Liverpool. The plant is a native of Trinidad. The flowers are produced numerously on a scape about two feet high, much branched and panicled. The flowers very much resemble those of Orcidium flexuosum. They are of a bright sulphur yellow color, spotted with deep red, producing a very neat and pretty appearance. The plant deserves a place in every collection.

- 20. Pentstemon Creviflorus. Short-flowered. Scrophularinæ. Didynamia; Angriospermia. A native of California, from whence it was sent to this country by the late Mr Douglas. It is a hardy perennial, of delicate habit. It produces a profusion of flowers which are small, of an orange red outside before expanding, afterwards of a white and purple color. Though not as showy as many of this tribe, yet it is an interesting and pretty plant.
- 21. Petunia violacea: hybrida. Purple Petunia, hybrid varieties. Solanceæ Pentandria Monogynia. The impregnation of P. violacæ and P. nyctaginiflora, has produced several very charming varieties, such as, Pale Pink with a dark centre; Sulphur with dark centre; White with dark centre, and other streaked and veined with dark. The size of the flowers of some of these hybrids has been much increased, some being three inches across. All the tribe merit a place in every collection of greenhouse, or border plants for summer, being highly ornamental in either situation. Petunia, from Petun, the Brazilian name.
- 22. Phycella brevituba, Short-tubed. Amaryllidacæ. Hexandria Monogynia. A neat and pretty species, which it appears will flourish out of doors if planted in a dry and warm situation. The Honorable and Reverend Mr Herbert has grown it successfully in this way, and in his treatise on Amaryllideæ, to be published this month, some instructions upon their treatment will be given, which being the result of many years observation and practical experience will be very valuable. Phycella from phykos red alkanet color.
- 23. Trichocentrum fuscum. Brown-flowered. Orchideæ. Gynandria; Monandria. Introduced into this country by Mr Knight, from Mexico, with whom it has bloomed in July last year; the flowers are small but pretty; green, white, red, and yellow intermixed. Neat and pretty.
  - 24. Rytidophyllum auriculatum, Gesneriaceæ. Didynamia Angios-

permia. Recently introduced into this country to the Glasgow Botanic Garden, its native country is not known, but it is probable from the West Indies consequently (if so) will require a hot house treatment. The stem rises several feet high producing cymes of flowers of a fine yellow, spotted with red inside, and a yellowish green outside. The tube is nearly an inch long, and the five parted monophyllous corolla is near three quarters of an inch across. Rytidophyllum, from rutis, idos, wrinkle: and phyllum a leaf.— Flor. Cabinet.

# ART. VII.—Renanthera Coccinea.—Chinese scarlet-flowered Air Plant.

THE merits of this magnificent plant were for a long time only known from the statements of a few individuals who travelled in China, together with a figure in the possession of the London Horticultural Society, and some remarks in the work of Loureiro, a missionary, published in 1790; until a few years ago a plant flowered in the gardens at Claremont, from which a beautiful drawing was made for, and inserted in the Botanical Register. The species had been at different times imported from China, and recognized amongst orchideous plants for its long leafy stems and fleshy veinless leaves; and from the peculiarity natural to all epiphytes, of attaching itself to damp or dry walls, pieces of wood, or any other body within reach of its long fleshy tortuous roots. A long time elapsed, after it had become general in collections, before a correct notion could be formed of the beauty of the flowers or the precise nature of the inflorescence. The reports of all travellers who had seen the flowers allowed them to surpass almost every other vegetable product known. Dr Lindley observes, in the Botanical Register, when speaking of this plant, that "the cause of previous want of success in inducing it to flower, has resided in its having been cultivated in too dry an atmosphere. Mr Fairbain, gardener to his Royal Highness Prince Leopold, at Claremont, impressed with this opinion, tried the effect of tying moss around the stems, and keeping it constantly damp, exposed as much as possible to the influence of the sun; with what success his experiment has been rewarded, appears from the accompanying representation of a portion of a panicle, two and a half feet long, which was finally produced in the hothouse at Claremont, in October, 1827." Now it appears to us, that a mistake has arisen as to the real cause of its flowering. In this we are well supported by the fact of the plant having rarely—we might almost say never—produced flowers in those collections where great moisture is kept up during the whole of the season. At Wentworth, under the superior treatment of Mr Cooper, the species has flowered several successive years; and it is well known, that that intelligent cultivator never washes his plants over head, nor keeps up amongst them a heavy moist heat. The plan was adopted with the plant that flowered at Chatsworth, and of which our present figure represents a portion, was as follows:-About April, 1836, we had a plant put into a small house appropropriated to the growth of a few stove plants, in which the heat varied from sixtyfive to seventy degrees; it was kept free from moisture, except what rose from watering and occasionally syringing.

Here the whole of the plant was exposed to the direct rays of the sun, and, as might be expected, this treatment caused the leaves slightly to shrivel, as well as turn a little yellow, but, by occasionally washing them over in the afternoon with the syringe, the plant did not suffer much; after it had been exposed in this situation for three months, we had the satisfaction of seeing two fine spikes of flowers pushing forth, one of which came to maturity. We have little doubt, if proper attention is paid to placing the plant well up to the glass, and without the use of shade, that a flower bud will soon make its appearance on a well established plant; it is necessary here to observe, that the plant ought to be six or eight feet high before this experiment is attempted. It is no wonder that the Chinese take pride in suspending from the ceiling of their rooms many of this interesting tribe, in coarsely wrought wooden baskets, some for the sake of their magnificent flowers, and others for their delightful fragrance. The plant at Chatsworth, when in flower, was truly splendid, but scarcely fragrant, and being placed in the cool end of the orchideæ house, it continued beautiful for nearly four months; and there is no reason to doubt, if the plant had been placed in a light situation, in a much cooler house, or even in the drawing room, but that the flowers would have continued perfect nearly as

long. It will succeed well in peat mixed with reduced potsherds, if placed carefully about the roots so as to ensure a safe drainage, or in spagnum or hypnum moss cut short and packed closely about the roots. Young growing plants will not succeed better in any place than where a strong heat and an abundance of moisture is kept up; any of the young branches taken off and potted in moss, will soon make young plants.

The accompanying wood-cut is a diminished representation of the plant, showing the mode of growth, and situation of the flower spike. In the woods in Cochin China, it is found growing on trees.

The generic name Renanthera, says Mr Loudon, is contrived by Loureiro, to express the kidney-form or reniform shape of the pollen masses.

The specific name, coccinea, signifies scarlet, or carmine, slightly tinged with yellow.—Paxton's Magazine of Botany.

# ART.. IX.—On the Disease of Young Apple Trees. By Mr. N. HARWOOD.

HAVING, for some years past, discovered that there was an evil attending our young apple trees, I have made some observations on the subject, which I shall communicate, in hopes they may be the means of leading to the discovery of some more effectual remedy.

The difficulty is what is commonly called lice, and is generally considered, by a superficial observer, nothing more than a kind of natural cutaneous eruption of the bark; but they are in fact, living lice. They appear, in form, like half a kernel of rye, but not more than one-tenth part so large, with the flat side sticking to the smooth bark of the tree. They resemble blisters, and are near the color of the bark of the tree. These blisters contain nits or eggs, in form like a snake's egg, which, in a common season, begin to hatch about the 1st and finish about the 15th of June. These nits produce a white animalcule resembling a louse, so small that they are hardly perceptible by the naked eye, which, immediately after they are hatched, open a passage at the end of the blister, and crawl out on the bark of the tree; and there remain, with but litle motion,

about ten days, when they stick themselves fast to the bark and die. From this little carcase arises a small speck of blue mould, which is most plain to be seen between the 15th and 25th of June, and continues about twenty days, and then gradually wears off until the old carcase appears, which by this time is formed into a new blister, and contains the spawns or nits before mentioned. These blisters prevent the circulation of sap in the tree in the same manner that filthiness and diseases of skin retard the circulation of blood in the human system, and prove as fatal to the tree as the canker worm.

In order to remedy the difficulty, I have made some experiments within a few years, but principally to no good effect, not knowing then the particular season when these animalculæ could be most easily destroyed. This I have found to be any time between the 1st of June and the 10th of July. The application that I have found most effectual is washing the tree with lev. Lime, also, mixed with ley, to the consistency of white wash, may be useful. And although the small branches cannot be cleansed in this manner without much difficulty, still if the body of the tree and the branches near the body are kept clean, until there comes a rough bark, I think the lice will not kill the tree. Some people have recommended the application of trainoil to the tree, which indeed is a powerful antidote against lice; but being of a glutinous nature, is very detrimental to the tree. Grafting has been proposed, which I since found to have no effect at all on the lice, except when the stock can be conveniently cut down below the surface of the earth; this process will exterminate them without fail.

These lice are natural in the uncultivated forest, on what is called moose-wood and other bushes. Much care should be taken respecting lice, on their first appearing in an orchard or nursery, as the cutting down and destroying a few young trees is of no importance, compared with the difficulty of having an orchard overrun by them.

Littleton, June 20th, 1837.

ART. X.—Calls at Gardens and Nurseries in the Vicinity of Boston.

CHARLESTOWN VINEYARD. We have frequently visited this place with much pleasure, while under the care of Mr Hagerston, and since it has been under the management of Mr Mason. Here the varieties of the sweet-water and other European grapes have had a fair experiment in the open ground, and if with the care that has been bestowed upon them by men so well skilled in their profession, and with an aspect so favorable as we think this must be, they cannot be cultivated to advantage, we are of opinion that it is useless to spend much time and money in the further attempt.

During ten or twelve years with the best management, these vines have produced but a small return for the expense incurred. A few years, producing moderate crops, and then the remaining years utterly disappointed the hope of the cultivator.

Charlestown Vineyard contains about two and a half acres; it is situated on the south western declivity of Breed's Hill, having a steep ascent from the green houses, which are located on the upper side. The vines are trained to trellices rising one above another. The place was laid out by Mr Hagerston some eleven or twelve years since. He had the superintendence of it a number of years, and every thing has been done by him and his successor to produce a plentiful crop. But with regard to the vines destitute of the shelter of the house, it may be considered as a failure.

In this place, as well as in every other garden we have visited this spring, it gave us pain to witness the destruction which our severe winter has caused among the peach trees. Mr Mason had already laid his axe to the root of the tree in a number of instances, and the few remaining looked as though they ought to be consigned to the wood pile or fire place. Should our seasons continue as cold as a few of the past, our horticulturists must abandon the cultivation of this delicious fruit also, and with the grape it must receive the protection of glass.

Mr Mason has an abundance of fine raspberry plants, which, according to present appearances, will produce a plentiful crop. We were shown a range of raspberry canes, with luxuriant foliage, which, Mr Mason informed us, were the produce of a plant raised

by himself from seed. It has proved to be a very superior variety, as those can testify, who have seen and tasted the fruit exhibited last season at the Horticultural rooms. The fruit is large, purplish red, and of an excellent flavor. A few plants are for sale, and we would recommend them to those who are about forming a raspberry plantation. It has been fruited three years; it is called the "New Grape Raspberry."

We were not aware that there was so much glass upon the place. There is one house 150 feet long, devoted entirely to grape, nectarines, and peaches; in this there is no flues for heating, and is appropriately called a cold house. The peaches and nectarines are trained to the back wall, and well set with fruit. The grapes appeared very well, but rather backward. In a climate so variable as ours, it is best in all cases, even in a cold house, to have heat at command. The expense of flues is not great in comparison with the loss of a crop of grapes, which may be materially injured, if not entirely spoiled, by a long spell of cold wet weather, when a little heat would have prevented it.

There are also two other houses, one 57 the other 52 feet long, devoted to grape and nectarines. A fourth house, 40 feet long, is for forcing early fruit and flowers. The fifth house, 75 feet by 18. is devoted to grapes and flowers—the flowers were now in their summer quarters, with the exception of a few pots of plants in flower. Among these the Fuschia globosa was the most attractive. being trained to fancy glass frame work, making a beautiful ornament for the drawing room. The collection of plants is very good. embracing many valuable specimens. The grapes in this house were the most forward of any on the place, but the crops will not be so heavy as in some previous years. The object of this garden is to supply bouquets, fruit, and plants, all of which have, heretofore, found a ready market. In consequence of the pressure of the times, as we suppose, the demand for flowers and plants has not been so great this season as usual; but when business has returned to its accustomed channels, we feel confident the call for these luxuries will be much greater than it ever has been before.

FARM SCHOOL, THOMPSON'S ISLAND. This establishment may not, in one sense, be denominated a nursery, but in another and

higher sense it may; a nursery for training and preparing for usefulness immortal beings. It may be called a garden, however, either way. Our principal object is to notice the improvements and progress in horticulture; but in the present instance we must be permitted to deviate a little, and give some account of this benevolent institution, as it seems to be intimately connected with this art, for it is from the products of the garden and farm, principally, that sustenance must be obtained for this large family of boys.

Notice has been given of a visit to this place about two years since, by one of the former editors of the Register, in vol. I, p. 294. It was then observed, that there were fiftysix boys in the institution at that time, and that they had been there only three weeks. That the institution was under the superintendence of Capt. Chandler, a man of intelligence and experience in agriculture. We refer our readers to that communication for a description of the Farm.

Capt. Chandler is still at the head of the establishment, and from the appearance of the boys, garden, and farm, we conclude that it has been managed in a very judicious manner. The number of boys has increased to one hundred and twelve, eight of which have been provided with good places; so there is at present one hundred and four in the institution; and a healthier, happier, more intel ligent looking lot of boys we never saw.

"The objects of the institution are, to rescue from the ills and temptations of poverty and neglect those who have been left without a parent's care; to reclaim from immoral exposure those who are treading the paths of danger; to place the solitary in families, to give to those who know nothing of the ties of influence from home, some taste and fondness for a local habitation at the least; and to offer to those whose only training would otherwise have been in the walks of vice, if not of crime, the greatest blessing which New England can bestow upon her most favored sons, a good education, are some of the purposes for which the Asylum and Farm School were endowed."

How the experiment has succeeded, must be learned in beholding the happy countenances of the children, the neatness, order, and harmony which pervades the place, the progress they have made in their studies, the appearance of the garden, and to know how much they do with their own hands for their own support. We

could not but envy the happiness of those who had the pleasure of laying the foundation, and contributing to the support of this institution. It may not yield so large a dividend in dollars and cents as many investments, but then what an unceasing, overflowing fountain of happiness it must be to those who have devised these liberal things, as they witness the success which attends this effort.

The employment of the boys seems to be properly divided between study, work, and play. The school is under the direction of Mr Hyde, a gentleman who appears to be at home among the boys, and they with him. We could not but admire the perfect order in his school, and the promptitude and readiness of the scholars in answering every question proposed. We think the managers peculiarly fortunate in securing the services of this gentleman. We have often done penance at a school examination; but it was not so here; it was a pleasure in a special manner to hear some of the boys read; we think they cannot be excelled by any in the city.

We were informed by Capt. Chandler that the boys have done most of the sowing and planting, and do most of the weeding, gathering seeds, harvesting, &c. The receipts from all sources for the year ending January, 1837, amounted to \$3,500, and the expenditure to \$6,000, leaving a deficiency of \$2,600. To meet this excess it becomes necessary to appeal to the liberality of the public. To this call we hope the public will generously respond.

From this farm our seed establishment has been partially supplied with some kinds of garden seeds. Capt. Chandler raised for us the past season to the amount of more than \$1,000, and from present appearances, probably, the same amount the present season. The English turnip seed will be ripe enough to harvest by the 10th of July, is very heavy, and will probably amount to 500 lb. Blood beet seed is another article which Capt. Chandler has raised to a large amount, and has succeeded in keeping it remarkably pure for many years. The different sorts of seed which have any affinity are placed remote from each other, to prevent the possibility of mixture.

Considerable improvement has been made the present season by the way of setting out trees, an ornament of which the island is rather destitute. About 100 apple trees, and as many forest trees, have been put out this season. One of the most interesting spots is the boys' flower garden, an oblong square piece, handsomely fenced off, containing perhaps about a quarter of an acre. Every boy has his own spot, which is laid and planted to suit his own fancy, and the whole forms an assemblage of squares, triangles, circles, segments of circles, and every possible shape that their boyish notions dictated. They have also a spacious play ground, where they seemed to enjoy themselves in the highest degree.

We were informed that about 500 loads of good manure are made annually by carting sea weed into the barn yard, and about 100 from the privy, by mixing its contents with loam. We were satisfied that to the article of manure, so necessary in agricultural operations, much attention is paid. We saw a field of about ten acres of spring wheat in a very promising condition, as were all the crops with the exception that they were rather backward.

We cannot leave this institution without commending it to the patronage of the public, as it seems at present to need a little fostering care; we think it can be made by and by to support itself.

J. B.

### ART. X.—Massachusetts Horticultural Society.

#### EXHIBITION OF FLOWERS.

SATURDAY, JUNE 9, 1837.

From J. P. Cushing, Esq., Belmont Place,—by Mr Haggerston—a superb specimen of Cactus speciosissimus, and a beautiful new species.

From John A. Kenrick—7 varieties of Pæonies, and 8 varieties of Azaleas.

FRUIT.—A pot of Keene Seedling Strawberries, by Mr Hagerston; the fruit of extraordinary large size.

SATURDAY, JUNE 17, 1837.

Mr Johnson, of Charlestown, exhibited a beautiful specimen of Austrian Rose Bush, containing numerous buds and expanded flowers. The outside of the petal is a fine orange yellow, while the opposite side is a brilliant scarlet. It is a single rose, and we think one of the finest we have yet seen in the whole tribe.

From the same gentleman,—Polemonium cerulea.

From S. Walker,—fine bouquets, containing, among other beautiful flowers, Dictamnus fraxinella, Lychness floscuculi plena, Spirea filipendula plena, Iris pallida, Hesperis matronalis plena, Polemonium, and some of his beautiful seedling Pansies.

For the Committee,

#### JOSEPH BRECK.

SATURDAY, JUNE 24, 1837.

By Mr William Kenrick, of Newton, a variety of cut flowers, among which we noticed Pœonies var. Iris, Purple Beech, Delphinium sinensis, &c.

John D. W. Williams, Esq. of Elm Wood, Roxbury, a very fine specimen of Erica ventricosa superba; it would give us great pleasure to see other specimens of this class of plants.

Col. M. P. Wilder, of Hawthorn Grove, Dorchester, Pansies in variety; Oncidium flexuosum—a parasite—has been in bloom more than four weeks, stalk twentyseven inches in length, with at one time, ninetyseven expanded blossoms.

Pæonia Albaflora Richardsoni Salpiglossis picta, variety Rose Mabach, (new French;) Alstromeria psittacina; Calceolaria, Grand Sultan. Many of the seedling Pansies exhibited by Col Wilder, were of great size and beauty.

Mr John Merrill, of Newton, specimens of Rosa Irene.

For the Committee,

S. WALKER, Chairman.

The public are respectfully invited to visit the rooms of the Massachusetts Horticultural Society on Saturday of each week, during the season of flowers and fruit from 10 to 12 o'clock, A. M.

Note by the Conductors.—Mr Walker has omitted to mention the splendid seedling Pansies exhibited by himself. The one named the "¿Village Maid," surpasses, in our estimation, any flower of its class ever exhibited by our Society. Some other fine ones he has named Othello, Clio, Hecate, &c.

### ART. XI. - Miscellaneous Articles.

VEGETABLE MARKETS AT ALGIERS.—The vegetables in the markets have an enriching sight glowing with all the colors of the rainbow - splendid heaps of purple grapes in one pannier, and oranges, peaches, lemons, and pomegranates in another. Here we see spread out in piles the huge and golden-hued melons and pompions, and there the white garlic and the "scarlet and green pepper pods," together with the brown melogines, an excellent pot vegetable, in size, shape and color resembling a polished cocoa-nut. Altogether, the vegetable profusion here beats even that of Convent Garden; the only exception to its glory is, that their carrots, turnips, and potatoes are smaller and dearer, in proportion to general prices, than with us. I was particularly astonished at the cheapness of Barbary figs — ten for a sou — in Scotch, a bawbee. It is a fruit entirely distinct from the true fig, and, although sweet, is insipidly flavored; but still it is palatable and nutritious, especially if the stomach requires a slight astringent. I ceased to be surprised at its cheapness, when I found that it grows wild on the road side, and may be had for the trouble of gathering. It is not an universal production over Barbary, but, where it grows, the poorer Arabs live on it almost entirely during the weeks when it is in season. It is about the size of an ordinary lemon, and grows on the cactus bush. - Campbell's Letters from the South.

The Cactus Bush.—This plant does not assume the shape of a tree till its leaves, which are about ten inches long, and an inch thick, twist themselves together into a trunk. It affords the singular phenomenon of leaves springing out of a leaf. The leaves are thickly covered with prickles, which, when they get into animal flesh, are with difficulty coaxed out of it. It is much used for hedges in Algiers: but if you should ever come to the South, I exhort you never to let your linen be spread out on the Cactus. An affecting story is told of a Dutch family who had a country house near this city. In the house there were five plump, interesting daughters, who, in an evil hour, gave their garments to be washed, by an ignorant European laundress. She hung them out to dry on these prickly bushes, and such evils were entailed on the lovely

wearers of them, that they could not sit nor recline with comfort for a week or two afterwards.—Ibid.

TURNIP FLY.—A correspondent in the Shrewsbury Chronicle states that the ravages of what is termed the "Turnip Fly" may be effectually prevented by the following application—One bushel of soot and two of quick lime incorporated, which are nearly sufficient for an acre, if the turnips are sown in the usual way, in drills. Let it be sown with the hand or the scoop out of a hopper when the seed leaf appears.

STRAWBERRIES .- Every body loves this most delicious of fruits. In milk, with cream and for preserves, it has but few equals, and no superior. Good strawberries gratify several of the senses at once, and combine, what in some cases are widely separated, health and pleasure. Strawberries too are easily cultivated, and with a little pains in procuring early and late varieties, they may be enjoyed in perfection for a long time. Yet little as is the cost, or trouble, required to enrich a garden with a plat of this fine fruit, few it seems, are willing to undertake it, and deprive themselves and their families of this wholesome and agreeable fruit rather than spend the requisite yearly half-day in digging and planting vines. Still men who will not procure a strawberry vine for their garden, will permit their children to ramble over their own and their neighbors meadows, trampling down the grass, acquiring predatory habits, and doing other injuries, besides spending far more time than would be required to produce an abundant supply of berries at home.

But perhaps some will say they have tried vines in the garden, and found that though they produced plenty of flowers they bore no fruit, and of course they gave up the bed as worthless. Very likely this may have been the case, for strawberries are of that class of plants which in the language of the older botanists produce male and female flowers or flowers which do not produce fruit as well as those that do. Every one has noticed in the common strawberry of the fields, patches of vines that flower abundantly but produce no fruit, and so it is with the garden strawberry. Observation, however shows that the non-bearing flowers are usually much the largest and fairest, while those that produce the fruit are comparatively small, and the flower leaves or petals curled; and this distinction

may be taken advantage of by any one, however ignorant he may be of the botanical nature of flowers. The best way, and the one that will effectually guard against disappointment in selecting bearing plants, is to mark the best bearing roots in such a manner that no mistake can occur when the proper season for transplanting arrives, which is either very late in the fall or as early in the spring as the state of the garden will admit.

When once the strawberry has been transplanted and placed in the plat where it is to remain, the only care required is to keep the ground clean, and free from weeds; and to cut off the runners that shoot out from the vines either by pinching them off with the thumb and finger, or clipping them with a pair of scissors. With these precautions, and the occasional digging over the ground between the rows of plants, and manuring with fine well rotted manure, a strawberry bed will last for years affording the best of fruit, and producing it in quantities surprising to one who has not tested its bearing qualities. Our advice then to the farmer is,—to plant a supply of strawberries in his garden — to send his children to school — and by all means, if he does not wish at mowing time to be vexed in spirit, or meet the maledictions of his neighbor, to keep his "little ones" out of all meadows whatever.— Gen. Far.

DESTRUCTION OF COCCI.—The small insect known by the name of Coccus arborum linearis is well known as an enemy to the apple, pear, plumb, peach, apricot, and other out-door fruits, as well as to vegetation in green and hot houses. The effect of their ravages on the former appear to be, that by absorbing the sap, the growth of the trees is retarded, the fruit loses both size and flavor, and the crop decreases. In consequence of the female Coccus adhering close to the bark, it is extremely difficult to eradicate, and in this state can only be removed by scraping it off the branches, a mode extremely tedious, and endangering the life of the tree. Various remedies are in use, as tobacco water, soft soap and water, lime water, and bitter aloes, all of which are destructive to insect life, but which generally fail in this case. This is attributed by Mr Ingpen to the application of the remedies at improper seasons, or when the female has become fixed to the plants. The application of lime water two or three times, at intervals of one or two weeks, and a dusting of quick lime

before the branches get dry; or a washing of soft soap and water, using also the powdered lime, is recommended to be applied when the young larvæ make their appearance, which may be known because they are locomotive and easily detected by a pocket magnifier. For plants in the green and hot-house, a solution of bitter aloes is said not only to destroy the insect, but prevent its future appearance on the plant washed with it. — Transactions of Entomological Soie ety.

PANCRATIUM CALATHINUM, Cup flowered Sea Daffodil. This is showy species of Pancratium is a native of the Brazils, and has been some time known in this country, although we meet with it but seldom in collections. It is highly deserving of cultivation, on account of its large handsome flowers and the delightful fragrance which succeeds their opening, and the amazing length of time each continues perfect.

Mr Campbell, of the Manchester Botanic Garden, furnished the sample for the drawing some time last summer. And we are informed that the length of time the flowers continued perfect was almost incredible.

Pancratium is a name given by the Greeks to a kind of Scilla; but the word signifying allforce, is clearly illustrative of its powerful effects in medicine.— Paxton's Mag. of Bot.

Thunbergia.—"Having a small rooted plant, about the end of February we shifted it into a No. 48 size pot, in the following compost: onehalf of light turfy loam, onefourth of leaf mould, one-fourth of fully decomposed wood or stick earth, to which we added a quantity of black heath soil, about one eighth of the whole, not sifted, but well rubbed through the hands. We stoved our plant in the front part of a pit in a vinery, the heat being generally from 65 to 70 degrees. We syringed it constantly with water heated to the temperature of 65 degrees, occasionally adding a small quantity of powdered sulphur, which kept it free from red spider. We sifted it as often as it was deemed requisite; and after it had grown for some time in a No. 16 pot, a trellis was made for it of the following description; six small green stakes were placed round the inside of the pot, four and a half feet long, with one in the centre five feet

long, for the purpose of carrying two cross-bars over the top of the trellis, to steady it, and running a circle of fine wire round the sticks. about eight or ten inches apart, till it reached the top of the trellis, which has formed a dome, by drawing the wire from one upright to the other. To each of the uprights we trained one of the shoots, (the plants having been constantly stopped,) and when they reached half way up the trellis, each shoot was again stopped, to cause the eyes to throw out lateral, which were trained round the trellis, forming one of each of the shoots as a leader, to reach the top of the trellis, when they were once more stopped, to furnish the upper half of the trellis, taking care to nip off all blossoms as they appeared. This was continued so long as it was desirable, to keep the plant in a vigorous growing state. When the weather became warm, the syringing not being sufficient to keep it moist, it was mostly watered once a day with liquid manure from sheep or cow's dung. It then received a final shift into a No. 8 pot, laying potsheds, broken small, about two inches thick in the bottom, over which was placed one inch thick of moss, being mixed with the soil, using the same compost as that mentioned at the previous shifting, with the addition of a little moss. The plant, treated as described above, was exhibited at the Horticultural Society's Rooms, Regent-street, London, where it was much admired. At the June show, a silver medal was awarded to it as a specimen plant. The size of the leaves are four inches long and three inches broad of the richest green. Such is the luxuriance of this plant, that we are obliged to nip off some of the leaves to allow the flower to be seen, and we have counted as many as two hundred flowers open at one time, some of which have measured nearly two inches in diameter." At the fete at Vauxhall Gardens, London, [the Metropolitan Society's] on the 11th of September, the Adelaide Medal was awarded for it. In the stove here, we have had several fine plants flowering since September last, in a temperature of 55 to 60 degrees. - John M'Evoy. - Flor. Mag.

IMPORTANCE OF DESTROYING WEEDS.—The abundance in which weeds are seen in some fields, shows conclusively that but little of the mischief caused by them is understood. Weeds are injurious to the land and to the crop in almost every possible way that they can be. In the first place they exhaust the soil to support their own useless growth, and abstract that nourishment from it, which ought

to go exclusively to support the crop. Secondly, they crowd upon other plants above ground, prevent them from branching out at their roots, and deprive them of a free circulation of air necessary for their health and vigor, so that they shoot up only single, weak, sickly stalks, incapable of producing a valuable crop. Thirdly, they thow off from the soil through their leaves into the air, an almost incredible quantity of moisture, and speedily reduce the ground to so dry a state, as to be fit for weeds only to grow in. So enormous is the quantity thrown off by some plants that it actually exceeds more than twice their own weight in a single day. A bunch of grass, placed during a very dry season, under a large vessel, sent off moisture in two minutes, so as to cover the vessel with drops, which run down its sides. Dr Watson, who first performed this experiment, was led to conclude from its results that an acre of grass exhales more than thirty hogsheads a day. Plants are in fact but channels through which moisture is conveyed up from the soil to be dissipated in the air; hence the absurdity of the opinion that weeds will prevent the ground becoming dry by shading it. Let any one in dry weather examine a piece of perfectly bare soil, a few inches below the surface, and compare its degree of moisture with that of soil at an equal depth, near the roots of a thick growth of weeds, and he will find the difference astonishing.

Now, of what use is it to attempt raising crops if they are to be wasted by a growth of weeds? Of what use is it to buy land, and plough it, and prepare it, and put in the crops, if after all, these crops are suffered to be eaten up by such intruders? If a drove of cattle should break into a field, no one would think of resting a moment till they were driven out; and yet many allow myriads of noxious weeds to overspread their lands, often doing three fold more mischief, with scarcely an effort to check their progress. But this is not only permitted in cultivated fields, but in meadows and pastures, which are sometimes literally covered with Canada thistles, St John's wort, and many others, to the total exclusion of every thing else from the soil. — Germantown Telegraph.

ENCOURAGEMENT TO FLORISTS. — At a late sale at public auction of the furniture and effects of a gentleman in Philadelphia, one rose bush sold at \$12,50, and another at \$4. Such prices will remunerate florists for the care and labor necessary to their cultivation, and should prompt them to diligence and exertion in producing the choicest varieties. — Silk Culturist.

### QUINCY MARKET.

[Reported for the Horticultural Register.]

[ rechotted for the storester and and		
ASPARAGUS, bun	ch 6	8
APPLES, Russets, barr	el 3 50	4 00
BEETS, Old, (none)		
New, bun	ch	6
Young for greens, pec	ζ.	12
BEANS, String, "	1 00	
CRANBERRIES, (scarce) bush	hel 6 00	
COCOANUTS, hund	dred 4 00	
CABBAGE, none		
CUCUMBERS, pair	12	25
CURRANTS, Green, quar	12	
GOOSEBERRIES, Green, "	12	25
HORSE RADISH, poun	d 10	12
LETTUCE, head	3	4
LEMONS, box	3 50	
ONIONS, Old, (very few)		
New, bunc	h	6
ORANGES, St Domingo, hundr	red 3 00	
POTATOES, Old, (Nova Scotia) - bushe	1	1 00
common, "		75
new "		3 00
PEAS, Green, "	2 00	
PICKLES, gallon	a 37	
PINE APPLES, hund	red	12 00
NUTS, English Walnuts, 100 lb	os. 5 00	7 00
Almonds, (hardshell) "	4 50	
Castana, "	4 50	
Filberts, "	3 00	4 00
Shagbarks, bush	el 1 50	
RHUBARB, poun	d 3	4
RADISHES, bunc	h 3	4
SQUASHES, West India, poun	d 3	
SPINACH, and other greens, peck	12	
TURNIPS, New, bunc	h 6	
STRAWBERRIES, quart	37	50

Apples are nearly out of market and season. Russetts are about the only kind on hand. The season has been propitious for Lettuce, and there has been an abundant supply of very fine heads of Early Curled, Royal Cape, &c. Green Peas, grown in this vicinity made their appearance at the Stall of David Hill, No. 105, the 15th of June, and sold at the rate of \$6,25 per bushel; they have now come in plentifully. Strawberries grown in the open ground made their appearance in the same stall the 16th and sold at 75 cents per quart. The cold, cloudy weather has prevented an abundant supply of this delicious fruit. The String Beans, and New Potatoes are from New York. Old vegetables have about disappeared. New Turnips are coming in very fine — New Beets in very small quantities.

Boston, June 24, 1837.

# HORTICULTURAL REGISTER.

AND

### GARDENER'S MAGAZINE.

AUGUST 1, 1837.

ART. I.—Bartram Botanic Garden. By ALEXANDER GORDON, Philadelphia; (to the Editor of the Genesee Farmer.)

MR TUCKER—In conformity with my promise to you when at Rochester in the month of May, I purpose occasionally sending for your pages such matter as I may deem worthy of notice. I flatter myself the following observations respecting the first botanical establishment ever attempted in America, its founder and his successors, with its present state in the scale of Botany and Horticulture, will be acceptable to many, particularly the gardening portion of your readers.

Bartram Botanic Garden is situated on the west banks of the river Schuylkill, about three miles from Philadelphia. It was established by that venerable and enthusiastic naturalist, John Bartram the elder, in the year 1720. The worthy founder of these gardens discovered in his early youth a love for philosophy and natural history in general. He was however particularly drawn to the study of botany, from considering the importance of vegetables in the practice of medicine, and their indispensable use in various departments of human economy. But at that time botany was but little attended to in America, and in the old world the works of the great Linnæus had not appeared; he had therefore no other aid in studying the great book of nature than his own persevering genius. His view in the establishment of the garden was to make it a deposit of the vegetables of the United States, (then British Colonies,) as well as those of Europe and other parts of the world, that they

might be the more convenient for investigation. He soon furnished his grounds with the curious and beautiful vegetables in the environs, and by degrees, with those more distant, which were arranged according to their natural soil and situation, either in the garden or on his plantation, which consisted of between 200 and 300 acres of land, the whole of which he termed his garden. The novelty of this horticultural scene attracted the notice of the ingenious and curious, and coming to the knowledge of Europeans, several scientific men in England, particularly of the Royal Society, united to encourage the founder to undertake journies towards the western frontiers, in order to discover and collect various non-descript productions in nature, particularly vegetables, that they might be sent to Europe.

From the American edition of Rees' Cyclopædia, I learn Mr Bartram corresponded with Linnaus, Lord Petre, Sir Hans Sloane, Dr Fothergill, and many other eminent men. The former said in one of his letters, that he (Mr Bartram) was the greatest natural botanist in the world. He employed much of his time in excursions through the provinces, from the shores of Lake Ontario to the source of the river St. Juan, in East Florida. He was appointed American Botanist to his Britannic Majesty George III., in which appointment he continued till his death in September, 1777, in the 76th year of his age. Mr B. was a native of Delaware county, Penn. John, the youngest son, succeeded his father as proprietor of the Kingsess Botanic Gardens, but they were chiefly under the superintendence of his brother, Mr William Bartram, well known in the literary world by his travels in East and West Florida, the Cherokee country, &c. &c., who accompanied his father on many of his extensive botanical tours, and who seems to have inherited his unwearied zeal and vigorous capacity for that sublime science. The fame of this gentleman extended to both continents; in his sphere he was one of the most useful men in America; his knowledge was acquired by incessant bodily labor; the fields of natural science in his days were unexplored, and he resorted to the study of nature where she unfolded her works to the senses as the only true source of knowledge. To this gentleman we are indebted for the discovery of many new and rare plants, and among others the Franklinia Altamaha, (Gordonia pubescens,) a beautiful tree so called in honor of Dr Franklin. At the solicitation and expense of

the celebrated Dr Fothergill, of London, he made excursions to the Floridas, and to the western parts of Carolina and Georgia, in search of rare and useful productions of nature, but chiefly of the vegetable kingdom, to which gentlemen he sent his collection of plants, dried specimens and drawings. The work already alluded to was the result of these travels. This work was published almost simultaneously in Germany, in Dublin, (Ireland,) and the United States.

A few minutes before the death of this enthusiastic admirer of nature, he wrote an article on the natural history of a plant, and in rising from his desk to take a morning view of the botanic grounds, he had only proceeded a few steps from the door, when he burst a blood vessel, which suddenly closed his useful life, July 22, 1823, in the 85th year of his age.

The gardens are now in the possession of Col. Carr, to whose indefatigable exertions, aided by that of Mrs Carr, the gardens owe their present celebrity, for they are the admiration of every visiter, whether native or foreigner. Mrs Carr is the daughter of John Bartram the younger, but to speak in just terms respecting her enthusiasm for plants, (which is only equalled by her success in their cultivation,) is a task I am incompetent to perform, for I am not possessed of words which could convey in the most remote degree the passionate fondness with which she toils among the plants, in every department, from the earliest dawn until darkness renders her operations impracticable. Mrs Carr's botanical acquirements place her in the very first rank among American botanists. Her knowledge of American plants is most extensive, not surpassed, if equalled, by any one in the United States. But, to this lady and her uncle, Mr William Bartram, the world is under another deep debt of gratitude, for it was to the friendly conversations and instructive communications of the latter that Alexander Wilson, my countryman, first imbibed, or at all events carried his passion to such an extent for the native birds of America. To the former (Mrs Carr) he was principally indebted for his knowledge of and his proficiency in drawing. To their combined efforts we are indebted for his American Ornithology.

In examining Bartram Botanic Garden, one characteristic feature will be obvious to the most inattentive observer, viz:—the large specimens of various trees planted by John Bartram, the elder, and his son, William Bartram. While on a visit to the garden in the month of November, 1831, I was forcibly struck with their magnitude, (see Loudon's London Gardener's Magazine, vol. 8th, p. 284,) but then, and on several succeeding visits, I could not dedicate time to ascertain their exact dimensions; however, with the assistance of Mr. Carr, Jr. I have recently been enabled to gratify myself on this point, having accurately measured thirty distinct species, the dimensions of which are as follows:

No.		Circum feet.	ference.	Height.
1.	Æsculus flava,	6	4	90
2.	Ailantus glandulosa, (25 years old,) .	. 4	2	55
	Andromeda arborea,	3	10	60
4.	Bignonia radicans,	. 3		
<b>5.</b>	Buxus sempervirens—vel variegata, .	2	6	25
6.	Castanea pumila,	. 2	9	
7.	Cercis canadensis,	3		35
8.	Chionanthus virginicus, (one limb of,)	. 2	6	20
	Cornus florida,	2	9	30
10.	Cupressus disticha,	. 23	9	123
11.	Cyrilla caroliniana,	2	1	
12.	Drospyros virginica,	. 5	7	70
13.	Gordonia pubescens, (Franklinia,) .	3	8	52
14.	Gymnocladus canadensis,	. 5	2	80
	Direa palustris,	25	6	8
16.	Halesia tetraptera,	. 4	0	45
	Juglans divæformis,	4	6	70
	Magnolia accuminata,	. 6	3	80
	auriculata,	4	1	50
	tripetela,	. 3	0	35
	Morus rubra,	4	l	40
	Pinus microcarpa,	4	4	
	——- picea,	5	5	85
	resinosa vel rubra,	4	9	75
	Porcelia glabra,	11	10	30
	Quercus alba,	. 12	0	80
27.	heterophylla,	3	9	50

<sup>\*</sup> Those marked with an asterisk were measured round the branches, and the whole for the circumference were measured about six feet from the ground

*28.	Rhododendron maxi	mum,			. 45	0	20
*29.	Sturtia virginica,				60	0	20
30.	Thuya occidentalis,				. 3	5	40

As before mentioned, the gardens are situated on the west banks of the Schuylkill river, about three miles from Philadelphia, and contain about eight acres of ground, compactly filled with the choicest ornamental trees, shrubs and herbaceous plants, properly located in their natural soils and altitudes as far as practicable. The mansion and green houses stand on an eminence, from which the garden descends by gentle slopes to the river. From the mansion are distinctly seen the winding courses of the Schuylkill and Delaware, with the broad spread meadows and cultivated farms up and down those streams. Beyond this there is an uninterrupted view of the Jersey shore, from the eastern to the southern horizon. The whole comprehends an extensive prospect, rich in the beauties of its scenery and endless in diversity.

The exotic department in the garden is very extensive, and comprises the following houses:

	Length.	Width.	
1. Green house,	50 0	30 0	
2. Orange house, &c	30 0	14 0	
3. Geranium house,	65 0	11 6	
4. Propagating house,	21 6	11 10	
5. Rose house,	49 0	13 6	
6. New Holland and Stove,	68 0	14 0	
7. Geraniums, roses, &c	26 6	10 6	
8 & 9. Rose Pitts,	93 0	7 0	
10. Cactus house,	20 0	8 0	

No expense is spared in procuring every desirable novelty for the exotic department, and in the Geraniacæ, Camellicæ, and Cactæ, this garden is particularly rich. Independent of the Botanic Garden, there is a very extensive Nursery connected with this establishment, occupying upwards of twelve acres, compactly filled with choice fruit trees, ornamental trees, shrubs, &c. Col. Carr has, by the most indefatigable exertions, imported the choicest varieties of fruit trees from the different horticultural establishments in England, France, Germany, &c. Col. C. not only imports scions of all that is rare and valuable, but also trees for immediate sale, the de-

mand for fruit trees in the western country being much greater than the existing establishments can supply. The unwearied zeal of the proprietor renders his nursery inferior to none in the United States, as respects the variety of fruits, ornamental trees, shrubs, &c. The whole establishment does great credit to the owner, who is universally respected, but not more esteemed for his laudable exertions and correctness in the various departments of his establishment, than for his amenity as a gentleman.

Immense quantities of seeds, collected in this garden from the old specimens, are annually exported to Europe. The garden is the resort of the Philadelphians, the casual visiter, and in fact of the tourist in general—they command universal admiration. In fact, the great variety they contain of the choicest American shrubsthe enormous magnitude of many, and the extensive collection of exotics, must prove a source of attraction to the amateur, and an interesting field for the scientific. But to convey an idea of the estimation in which these gardens are held, I may here mention that the Philadelphia and Baltimore rail road, now constructing, as originally planned, would have gone through the very centre of the gardens, and sacrificed the most splendid of the specimens, but the rail road company, with a desire to preserve them entire, altered the route at an additional expense to themselves of 10,000 dollars. Such a magnanimous act was highly meritorious, and deserves the gratitude of an American public.

Col. Carr corresponds with many scientific gentlemen in Europe, and in North and South America, consequently the garden is a depot for all that is rare and valuable.\*

\* It is, I understand, the intention of Col Carr to dispose of the gardens, green houses, &c. Should he meet with any gentleman who would preserve them entire, or if the Philadelphia Horticultural Society would purchase them, he would make considerable sacrifice. To any gentleman devoted to botany, what an opportunity here presents itself, and it is sincerely to be hoped that either the society will purchase them. or that some amateur will step forward and possess himself of this rich and charming establishment.

A. G.

## ART. II .- Formation of Dew.

ONE of the operations of nature most important to the growth of plants, and without which, in some parts of the world, vegetation could not be carried on at all, is the formation of dew. The deposition of dew was formerly a subject involved in much mystery, but the researches of science and investigations in meteorology have thrown much light on the matter, though it cannot as yet be considered as freed from all difficulties. According to the best modern authorities, "the phenomena of dew admits of an easy and elegant explanation, from the well known effect of the radiation of caloric from bodies. This radiation constantly taking place in all bodies, it is obvious that the temperature of any body can remain the same only by receiving from another source as many rays as it emits. the case of the earth's surface, so long as the sun remains above the horizon, it continues to receive, as well as to emit heat; but when the sun sinks below the horizon, no object is present in the atmosphere to exchange rays with the earth, which, still emitting heat into free space, must consequently, experience a diminution in its temperature. It thus becomes not only many degrees cooler than in the day time, but also cooler than the superincumbent air; and as the atmosphere always contains watery vapor, this vapor becomes condensed on the cold surface; hence the origin of dew, and if the temperature of the earth is below 32°, of hoar frost." This explanation appears very satisfactory as far as it goes in accounting for the deposition of dew, but there are some facts connected with the subject which do not seem to be fairly embraced in this or any other general solution.

What are the facts connected with the formation of dew? Observation shows us that the times in which dew is deposited most copiously, are those in which the morning and middle of the day are filled with vapor, but which, with all the agitation of the atmosphere, gradually disappears as the sun declines in the west. Vapor is composed of minute vesicles or bubbles, and these collected into masses from clouds. Vapor could not rise as it does, visibly in the case of steam, and invisibly in the case of evaporation from the surface of water or the earth, unless the atmospheric fluid with which these vesicles are filled was specifically lighter than common air.

The most plausible supposition, and one which would seem to be justified by the nature of the phenomena, is, that the fluid which fills these vesicles is the ethereal substance called the electric fluid; and consequently each minute particle of vapor may be considered as a charged Leyden jar, and a mass of them when collected into clouds as an immense electrical battery. The researches of science have shown most conclusively the identity between the electric fluid and caloric, and hence it is seen that any cause which should abstract the caloric or electricity of the particles or masses of vapor, would at once effect their condensation. When the caloric is abstracted from a particle of vapor, the watery envelope forms an invisible drop, and is deposited in the shape of dew; when it is abstracted from a mass of vapor, as by a flash of lightning from the clouds, these separately invisible particles are united and drops of rain are the results. Much of the difficulty which has been found in divesting the formation of dew of its mystery has arisen from the fact that electricity and caloric have been usually considered as different things; whereas, by admitting they are one, most of the difficulties vanish at once, and the deposition comes readily into the class of recognized phenomena.

In perfect accordance with the grand and universal law of nature, that an equilibrium of caloric or electricity must be maintained, a law which is unquestionably the cause of all circulation, and will probably be found that of all motion, the caloric of the surface of the earth thrown off by radiation, must be supplied from some other source; and this source, in the absence of great declination of the sun, can only be found in the caloric combined with the vapor of the atmosphere. Substances that radiate or throw off caloric the most readily are usually the soonest covered with dew, as glass, water, &c. Every one who has paid attention to the formation of dew must have noticed that the first appearance of moisture visible is a minute but rapidly increased drop on the upright pointed extremity of the leaves of grass, or similar plants, and this first appearance is usually some time before the setting of the sun. Much however is depending on the purity of the atmosphere and its freedom from all currents of air. The experiments of Hare and Silliman on electric currents with the voltaic battery, we are inclined to think throw light on this deposition of dew on the points of erect grass. In these experiments it was found that in the passage of the

electro-magnetic currents when pencils of charcoal were used for the connecting points, a deposition of matter gradually took place on the negative point, while a corresponding loss was sustained by the positive one. In supplying from the atmosphere the caloric lost by radiation, the grass points serve as conductors to the ethereal fluid; and, as at the instant of contact between the attracted particle of vapor and the point of the grass, the caloric leaves the moisture which had served as its envelope, the latter is condensed and deposited on the point where the separation takes place; and as the current is constant; the accumulation of the globule of dew is, of course, rapid, until the equilibrium between the atmosphere and the earth is restored.

After the formation of dew has commenced, any agitation of the air by winds, or the formation of clouds, will at once arrest its progress, as clouds prevent the radiation of caloric from the earth and its consequent cooling. A knowledge of this fact has enabled gardeners to preserve plants from frost that otherwise must have perished; and in the early settlement of the western counties of this State, the formation of artificial clouds, as they may be termed, by the condensation at evening of the immense volumes of smoke that arose from the lands that were being cleared of their timber, was found to be an effectual safeguard to such late crops of corn as were endangered by frosts. Indeed it is found that the cooling of the earth necessary to the deposition of dew, rarely takes place while the thinnest strata of vapor is visible in the atmosphere. Young plants in the garden may be preserved from frost by spreading over them any thing, however flimsy, that will prevent the radiation of the earth, as a simple mat, or a box with a millinet or muslin covering, or even a linen cloth, provided that the covering does not touch or rest upon the plants. Vegetables or trees growing near walls, houses, or high fences, are sometimes saved by the partial check these afford to radiation; and every farmer who plants his orchard knows that corn or potatoes planted under the trees will remain green long after those around them have been killed. In this case the spreading top or foliage of the tree intercepts the radiated heat and returns a part of it to the earth by the electric currents that exist in all vegetables.

The rapidity with which dew forms, about sundown, may be considered a pretty sure criterion of the degree of cold which will pre-

vail during the night; and, of course, the necessity of precaution, or otherwise, may be determined upon in season to save such plants as require protection. The formation of ice in warm climates furnishes a curious proof of the radiation of heat. In Bengal, and principally in the vicinity of Calcutta, some three or four hundred persons, previous to the introduction of New England ice by Yankee enterprise, found a constant and profitable employment during the summer months, in the manufacture of ice, for the use of the European residents. Broad, shallow, unglazed, earthen pans, were placed on dry straw, and when water was poured into them, ice of the thickness of half an inch was sometimes formed in a night; and those nights, in which dew was deposited most copiously, were always found to produce the thickest ice, while clouds or wind interrupted it entirely.—Genesee Farmer.

W. G.

## ART. III.—On the Culture of the Onion. By Mr Towers.

Season of planting.—In February or very early in March, a number of small onions of the variety called Spanish or Reading, should be collected, the bulbs not to exceed an inch and a half in diameter; those of one inch will do very well, but they ought to be round, flattish, perfectly formed, and not in a growing state. It must be remembered that each of the onions should produce two, three, or four new ones, and the calculation might be founded upon this probable return. The upper soil of the bed, if it be dry, should be sprinkled, and then beaten with the flat side of a spade to a firm and level surface; the angles of the squares to be nine inches apart. Some persons might prefer to stretch the line, and to plant row after row, the onions to stand in quincunx or alternate order; but whatever be the mode adopted, the surface should not be broken up, and an onion is to be placed on the soil, at every angle of the squares, or at an equal distance, along the line, and firmly pressed down till it be half immersed. Care must be taken also to let the root be fixed straight, so as to send its fibres perpendicularly downwards; the growth of the plant will then from the first be quite upright, and the bulb will be fixed firmly in its place; whereas, if the bulb

lie on one side, it is very liable to be displaced. Worms are trouble-some visitors on these occasions; therefore, soot, air-slacked lime or wood ashes should be dusted freely over the surface; the operator must also be on the alert to refix any bulb which may be disturbed.

If the weather be early dry and parching in March, water may be safely given by making holes, sloping diagonally, from the centre of the intervals towards the lines of bulbs, but to at least four inches below them, and in these, water may be freely poured. In frosty weather, of course, nothing of the kind will be attempted, but in dry warm seasons, too much water cannot be given to the under strata; the surface soil, on the contrary, should be as dry as possible.

Under favorable circumstances, growth will be rapidly establish. ed, and the gardener will have to observe many interesting and beautiful phenomena. Leaves will at first be developed, but these are not now the organs of nutrition to the parent bulb, from the coated layers of which they indeed proceed. A system of foliage is indeed vitally required, but its energy in the present instance, can be diverted from that course which nature ordains it to take. In this second year, the leaves are destined to nourish the progressing organs of fructification, and it will be observed that each bulb sooner or later, produces a flower stalk, with its umbel of flowers concealed within their spathe at the summit. As soon as this head at the point of the flower stalk, shall be distinctly seen, it must be pinched or cut off. Upon this operation depends the entire success of the plantation; for if the flowers develop, and the seed vessels enlarge, the bulbs will have no successors. A second, perhaps a third, flower sheath may appear, and must be immediately obliterated; this done, the leaves become stronger, and their laborated juices are instantly diverted, and called in aid of those germs of young bulbs which lie in embryo, and would perish with the parent, were the seed bearing processes allowed to be carried to any considerable extent.

After the final excision of the flower stem, a singular change, or rather a new development, takes place in the bulb. From being soft and spongy, owing to the previous exhaustion of the layers, they begin to re-acquire solidity,—that is, they appear to acquire it, for the phenomenon is in reality dependent upon the progressive, but

almost secret, production of one or more new bulbs. Nothing can be more impressive than this mysterious development; its course can scarcely be traced. I do not dare to assert, that a practised eye, gifted with a peculiar quickness in discerning physiological mutations, may not mark and detect those which are wrought in the formation and the enlargement of the new onions; but I do say, that among above ninety plants which I obtained last summer, neither I myself, nor a youth who planted the old bulbs, could trace the progress of the new ones. I may be excused for quoting the passage which I wrote in my diary, because it may be considered more simply true to the then observed facts, than any thing I could now pen from recollection.

"As the leaves advanced, the bulbs became soft and exhausted; as flower heads arose, they were pinched off and gradually new bulbs formed, two, three, and four to each, the old bulb and skin vanishing in a way not to be detected."

I admit I have adopted this mode of planting but once, and, therefore, may have been in some degree misled. A future experiment will perhaps lead to more correct observation. I hope, however, that numbers may be induced to inquire for themselves; they will assuredly be recompensed by a very excellent crop of good onions, of a medium size, either in June or July. Mine, of 1835, was retarded by the extreme drought and piercing nights of May, and I had not attended to the previous preparation of the bed. I have expressly selected the Spanish or Reading onion for this summer crop, because it is mild and pleasant in flavor, and may be grown to greater perfection at the season; the process is worthy of the variety, and the variety is adapted to the process. The summer onions do not keep very long, nor is the Spanish a long keeper at all; hence particularly improper for the full winter crop, which ought to be hardy and of higher flavor. I might have chosen the Tripoli, which produces the largest bulbs, so large, indeed, that Mr Knight assured me he had grown several bulbs that weighed more than two pounds each, but it is very apt to decay. Many gardeners affect the variety termed the underground or potato onion; but the process I have described furnished, I think, an excellent substitute for it, especially as the flavor of the Spanish is far more delicate than that of the underground bulb. I claim none of the merit of discovering the foregoing method of multiplying the bulbs; but am certain that if practised by any, it is known to very few persons, and my remarks will tend to diffuse the knowledge of it.

Seed Crop.—These fine large onions may be raised pure to their originals, by planting imported bulbs in a warm situation, exposed to the sun. The season might be the same as that of planting for a summer crop, and the soil a rich, mellow, sandy loam, well manured. The foregoing process for bulbs is adapted to the culture of seeding onions, with this especial exception, that the flower heads must be encouraged, and each step supported by a stake, as it advances in height. I am inclined to believe that were the imported bulbs of the Tripoli, Spanish, and Portuguese planted, one in a large pot of very rich soil, about the first week of January, protected under glass in a common garden pit or vinery, not in action, and finally transplanted, with the ball of fibres entire, when all danger from severe frost had ceased, a month would be gained, which, in the north, might be found of some consequence, as the seed would be matured by an August sun.—Canterbury (Eng.) Journal.

ART. IV.—On the Systems of Cropping Kitchen Gardens adopted by the best private and commercial gardeners; with an attempt to reduce them to fixed principles. By W. D. S.

The subject of cropping the ground in kitchen gardens embraces the preparation of the soil, the insertion of the seeds or plants, their after culture, the gathering of the crop, and the system according to which one crop is made to succeed another. As the discussion of all these points, however, would involve the repetition of what is already well known to every gardener, the article now submitted to the reader, and for which his indulgence is entreated, is limited to what is properly called cropping, or the succession of crops. Crops in kitchen gardens, are put in the ground according to three distinct plans or systems, which may be termed successional cropping, simultaneous cropping, and permanent cropping.

Successional Cropping, is that in which the ground is wholly occupied with one crop at one time, to be succeeded by another crop, also wholly of one kind: for example, onions to be followed by winter turnips, or potatoes to be followed by borecole.

Simultaneous Cropping, is that in which several crops are all coming forward in the ground at the same time: for example, onions, lettuce, and radishes, sown broadcast; or peas, potatoes, brocoli, or spinach, sown in rows.

Permanent Cropping, is where a crop remains on the ground several years; such as sea-kale, rhubarb, asparagus, strawberries, &c.

To these modes might be added, mixed ligneous and herbaceous cropping, such as growing herbaceous crops among gooseberries, currants, raspberries, and other fruit shrubs, and among fruit trees. The practice of growing culinary crops among fruit shrubs is, however, nearly exploded in the best gardens, on account of the injury done to the shrubs when they are young and small, by the roots and shade of the culinary crops, and of the injury done to the culinary crops when the shrubs are grown up, by the shade and confinement which they produce. For the same reasons, cropping between trees is by no means desirable in small gardens, where the trees must necessarily be at no great distance from each other; but in the case of very large gardens, such as those of commercial gardeners, where trees are planted in close rows at 20, 30, or 40 yards apart, so as to shelter the ground, the cropping may be carried on in the spaces between rows of trees, on the principles which regulate successional, simultaneous, or permanent cropping, in ground where there are neither trees or shrubs.

The object to be attained by a system of cropping is that of procuring the greatest quantity and the best quality of the desired kind of produce, at the least possible expense of labor, time, and manure; and, in order that this object may be effectually obtained, there are certain principles which ought to be adopted as guides. The chief of these is to be derived from a knowledge of what specific benefit or injury every culinary plant does to the soil, with reference to any culinary plant. It ought to be known whether particular plants injure the soil by exhausting it of particular principles; or whether, as has been lately conjectured by De Condolle, and, as some think, proved, the soil is rendered unfit for the growth of the same or any allied species, by excretions from the roots of plants; while the same excretions, acting in the way of manure, add to the fitness of the soil for the production of other species. The prevailing opinion, as every one knows, has long been, that plants exhaust the soil, generally, of vegetable food, particularly of

that kind of food which is peculiar to the species growing on it for the time being. For example; both potatoes and onions exhaust the soil generally, while the potato deprives it of something which is necessary to insure the production of good crops of potatoes, and the onion of something which is necessary for the reproduction of large crops of onions. According to the theory of De Condolle, both crops exhaust the soil generally, and both render it unfit for the repetition of the particular kind of crop; but this injury according to his hypothesis, is not effected by depriving the soil of the particular kind of nutriment requisite for the particular kind of species; but by excreting into it substances peculiar to the species with which it has been cropped, which substances render it unfit for having these crops repeated. Both these theories, or rather, perhaps, hypotheses, are attended with some difficulty in the case of plants which remain a great many years on the same soil; as, for example, perennial-rooted herbaceous plants and trees. The difficulty, however, is got over in both systems: by the first, or old theory, the annual dropping and decay of the foliage is said to supply at once general nourishment, and particular nourishment; and by the second, or new theory, the same dropping of the leaves, by the general nourishment which it supplies, is said to neutralize the particular excretions. It must be confessed that it is not very obvious how general nourishment, dropped on the surface of the soil, can neutralize the excrementitious matter deposited many feet beneath the surface; as in the case of long rooted herbaceous plants, like the saintfoin, lucerne, &c.; and deep rooting trees, such as the oak, &c. Nevertheless, we find that these plants will remain a longer period on the same soil than others, the roots of which never go to any great depth beneath the surface; such as the fibrous-rooted grasses, the strawberry, &c., and the pine and fur tribe. We mention these things to show that, though it is not yet determined which is the true theory, yet that the fact of plants injuring or diminishing the fertility of the soil, both generally and particularly, does not admit of a doubt.

In the absence of principles founded on whichever of these hypotheses may be true, recourse is obliged to be had to rules drawn from the experience and observation of those who believe in the old theory. These rules, as adopted by the best gardeners, are as follows:

Crops of plants belonging to the same natural order or tribe, or to

the natural order and tribe most nearly allied to them, should not follow each other. Thus, turnips should not follow any of the cabbage tribe, sea-kale, or horseradish.

Plants which draw their nourishment chiefly from the surface of the soil should not follow each other, but should alternate with those which draw their nourishment in great part from the subsoil. Hence, carrots and beets should not follow each other; nor onions and potatoes.

Plants which draw a great deal of nourishment from the soil should succeed, or be succeeded by, plants which draw less nourishment. Hence, a crop grown for its fruit, such as the pea; or for its roots or bulbs, such as the potato or the onion, should be followed by such as are grown solely for their leaves, such as the common borecole, the celery, the lettuce, &c.

Plants which remain for several years on the soil, such as strawberries, rhubarb, asparagus, &c. should not be succeeded by other plants which remain a long time on the soil, but by crops of short duration; and the soil should be continued under such crops for as long a period as it remained under a permanent crop. Hence, in judiciously cropped gardens, the strawberry compartment is changed every three or four years, till it has gone the circuit of all the compartments; and asparagus beds, sea-kale, &c., are renewed on the same principles.

Plants, the produce of which is collected during summer, should be succeeded by those of which the produce is chiefly gathered in winter or spring. The object of this rule is, to prevent two active and exhausting crops from following each other in succession.

Plants in gardens are sometimes allowed to ripen their seeds; in which case two seed bearing crops should not follow each other in succession.

These rules, and others of a like kind, apply generally to the three different systems for the succession of crops; and they are independent altogether of other rules or principles which may be drawn from the nature of the plants themselves; such as some requiring an extraordinary proportion of air, light, shade, moisture, &c.; or from the nature of the changes intended to be made on them by cultivation, such as blanching, succulency, magnitude, &c. We shall now notice the different systems separately.

Successional Cropping.—The plants best calculated for this mode

of cropping are such as require, during almost every period of their growth, the fullest exposure to the light and air; and as remain, also, a considerable time in the soil: these are, the turnip, the onion, the potato, the beet, the carrot, &c. If any of these crops are raised and brought forward under the shade of others, they will be materially injured both in quality and quantity; though, at the same time, while they are merely germinating, shade will not injure them. Hence, successional cropping may be carried on in breadths of 20 feet or 30 feet, between rows of tall-growing articles, without injury; which approximates this manner of cropping to the simultaneous mode, which, wherever the soil is rich, is by far the most profitable.

The simultaneous mode of Cropping is founded on the principles, that most plants, when germinating and for some time afterwards, thrive best in the shade; and the tall-growing plants, which require to receive the light on each side, should be sown, or planted, at some distance from each other. Hence, tall-growing peas are sown in rows 10 feet or 12 feet apart; and between them are planted rows of the cabbage tribe; and, again, between these are sown rows of spinach, lettuce, or radishes, &c. Hence, also, beans are planted in the same rows with potatoes or with cabbages, (an old practice in the cottage gardens of Scotland;) and so on. The great object in this kind of cropping is, to have crops on the ground, in different stages of growth; so that, the moment the soil and the surface are released from one crop, another may be in advanced state, and ready, as it were, to supply its place. For this purpose, whenever one crop is removed, its place ought to be instantly supplied by plants adapted for producing another crop of the proper nature to succeed it. For example, where rows of tall marrowfat peas have rows of broccoli between them, then, the moment the peas are removed, a trench for celery may be formed where each row of peas stood; and between the rows of broccoli, in the places where lettuces were produced early in the season, may be sown drills of winter spinach.-Loudon's London Gardeners' Magazine.

## ART. V.—On the Potato, particularly the Early Varieties.— By A. Forsyth.

My respected father cultivated this root during a period of half a century; and I have prepared sets, planted and cultivated them, after his instructions, under his eye, and since that time, for a period of nearly twenty years. I have also had it in my power to mark their culture in different parts of Britain, (some 500 miles between,) in various soils, and under various circumstances, with as various success; and, notwithstanding all the experiments that have been made (as detailed in the *Horticultural Transactions*, and other papers on this subject to which I have had access,) it does not appear to me that any of the writers have reached the root of the evil.

In the first place, then, according to our theory, there is a radical error in the practice, much in vogue among the growers around London, of taking up the tubers intended for sets before they are quite ripe: another practice, no less pernicious, in my opinion, is, the keeping of them in large heaps, with moist soil round them, or in warm sheds; and another evil is, the growing of potatoes for years in the same kind of soil. A friend informs me that, in the black shallow soil of Dartmoore, in Devonshire, extensive potato plantations are made, the sets for which are every second or third year procured from the farmers where the soil is red or yellow loam, But to come to the point; and first, then, I will relate how we discovered what I consider a superior method of keeping the sets. taking in a stock of corn, which had been built on a rustic platform of wood, about four inches clear of the soil, some beautiful specimens of potatoes were found in an admirable state of preservation (it being late in the season) in the soil; or I may rather say dust, for it was so dry that it would have drifted in the wind. This was taken as a hint; and subsequent practice confirmed the idea, that to keep potatoes in the highest state of perfection (that is, perfectly dormant, and yet plump and full flavored,) they require to be taken up in dry weather, when they are perfectly ripe, (that is, when the strings and the tubers part freely,) and deposited in layers, with dry soil between; say one layer of potatoes, three inches deep; one inch of soil; three inches more of potatoes; then six inches of soil; and over this a water proof thatching, erected on props six inches high, that the winds may act freely on the soil under the thatch.

Gardeners, requiring but small quantities, should look out for seed potatoes in summer, from soils of a different nature to that which they intend to crop; and should have them brought home as soon as they are ripe, and get them deposited as above detailed; they will thus obtain sound perfect sets, uninjured by fermentation or unwholesome damps. To prepare the sets, tubers, about the size of a hen's egg, may be cut in two, putting the crown sets by themselves, which should be planted for the earliest crop. Immediately after the sets are cut, let them be planted: no drying is necessary. Indeed, I should not allow a seed tuber to be exposed to the air, either in the autumn or spring, for a single hour, if I could prevent it. In planting, dig the ground one full spade or spit deep (if previously trenched, so much the better.) When two spits have been dug all across the quarter, let the line be strained on the dug ground, and a drilled chopped out about six inches deep, in which a layer of any half-rotten manure may be put, such as old mushroom beds, half-decayed leaves, fermented stable dung, &c.; on which (not under it) place the sets, eyes uppermost, four inches apart, and then let them be covered with the broken soil in the trench; after which the planter may proceed to dig for another row, which may be two feet apart. A great many systems of planting potatoes are practised round the metropolis, many of which, to say the least of them, are very unworkmanlike; planting with the dibber is a detestable practice in a garden. 'The best early sorts that I am acquainted with are, the ash-leaved kidney and the early manly; but any of the early sorts, if true, will succeed for all ordinary purposes. No vegetable is more easily forced or forwarded than the potato, if allowed plenty of light and air, and kept from frost: it will bear a strong heat, and thus suit itself to any forcing structure, from the pine stove at 70°, to the matted bed in the open border, that is only defended from the frost by coverings. A slight hot bed is generally preferred, of dung, leaves, or tan, say three or four feet deep; with a stratum six inches deep of any light soil, in which the sets are inserted about three inches deep, in rows fifteen inches by five inches. Time may be gained by forwarding the sets in a box of soil, placed in any of the forcing houses, and planting them out, under some protection, after they have pushed and begun to root. There are various ways of getting young potatoes (as in cellars, and in boxes of sand) from large coarse varieties; but, as the produce is both unwholesome and unpalatable, I should rather caution against the using of them, than recommend the practice. The earliest potatoes, in the open ground, may be planted about the fifteenth of March; and the latest before the first of June.—Gardener's Magazine.

(For the Horticultural Register.)

## ART. VI .- The City Flower Garden.

Among the many comforts in possession of the citizen, that of the "City Flower Garden" may be considered of the first order, as the pleasures derived from it are of a character which embraces health, pleasure and moral rectitude.

Any intelligent person must be aware that the continual working of ground in cities, in a great measure, rectifies the impure vapor that is always present from smoke, decaying leaves, and other substances, and that the more any part of city gardens are worked, the more healthy and pure is the nature of the atmosphere, and hence the utility of often working flower gardens in cities, independent of its better appearance to the eye of the observer. Again, we are informed by botanists and vegetable physiologists that trees and plants respire and perspire in a manner that is congenial to the health of the animal kingdom, and hence may infer the double utility of trees and shrubs in cities, when their cooling shade is taken into consideration.

The pleasure derived from a fine collection of flowers requires no comment, only, that the more varied and perpetual the flowering, the greater is the gratification to the observer. The moral lesson that can be obtained from flowers also forms another fine characteristic in the flower garden; for flowers not only please the eye and gratify the passing observer, but contain a beauty in their structure in the most minute parts and coloring, that conveys a pleasing and natural lesson to the most accurate and intelligent observer; and every thing to please and nothing to offend, either the morals or nicest observer, is the true characteristic of the flower garden.

There is nothing that I am acquainted with relative to Horticulture that has been more generally improved than the city flower

garden, which is now becoming general, and will no doubt ever improve—for it is an appendage, when well managed, that always gives pleasure to all kinds of persons, and the inmates of the dwelling. And what can be more grateful to the merchant, or man of any professional business, than to recreate, for a short time, in a well selected collection of flowers, neatly arranged and cultivated? Every one either engages his attention by its fragrance, color, or or peculiar character, and many, as the rose, white lily, &c. embrace every thing to attract our most ardent desires.

In closing these remarks, I shall throw out some few hints relative to obtaining the proper method of selecting and managing a flower garden, which will, perhaps, be useful to some of your readers.

The plan of the garden, be it either large or small, generally pleases when it is so constructed as to give a variety in the design—formality, though often the leading feature, seldom gives that ease that is requisite; the planting of the ground should also bear the nicest consideration, by which I mean, that such shrubs and plants should be selected that will form a pleasing contrast, and appropriate in the different places assigned to them. And, lastly, such plants should be chosen that will give a succession of flowers from the early part of the spring till the winter closes the flowering season. The first of these may be effected by any person of taste, and the latter, which is the selecting, can never be better and more accurately done than to visit nurseries and gardens, where such plants are for sale, and select plants at different seasons, in flower, when their true character and portrait can be seen.

JUNIUS.

ART. VII.—A Preventive of the Blight in Pear Trees. By Hen-RY N. WATKINS, Prince Edward.

The preventive is the simplest imaginable — it is not to prune the tree, or break up the ground underneath them; but, on the contrary, to let the ground be trampled. The facts, from which I come to the above conclusion, are the following:

1st. There were in my grandfather's yard two pear trees, which

have been bearing trees from my earliest recollection, say forty years. I am now the occupant of his houses and yard. These two trees are now as healthy as they ever have been. The yard has always been trampled by calves and horses.

2d. There was a row of four trees in a lot adjoining the yard, which was occasionally cultivated. These trees have blighted, more or less, whenever the lot has been cultivated. Two of them have died with the blight; the other two have been several times very much injured by it, but since I have ceased to cultivate the lot, they have been flourishing trees.

3d. I grafted in the year 1821, about twenty pear trees. They remained in the nursery until 1824; they were then planted in a lot adjoining my yard, which lot was cultivated three years in succession in tobacco. Most of the trees during those three years, blighted more or less—some blighted within a foot of the ground. I then levelled the ground on which they were planted, and moved my fence so as to enclose them in the yard. Such as had been nearly destroyed by blight, I enclosed by a pen of rails, in order to keep off the calves which graze the yard, until the trees had grown sufficiently high not to be injured by them. These twenty trees are now all healthy, and there has been no appearance of blight, since I cultivated the lot, except in one tree that was enclosed by one of my servants in a garden, in which he cultivated vegetables. That tree was blighted and died.

I would recommend that pear trees be planted in a rich soil (I would prefer the site of an old dwelling) — that they be ploughed and worked a few years, even at the risk of blighting; and after that, that they be neither pruned nor ploughed. If they require manure, let it be applied to the surface. Ashes I think an excellent manure. Let the pear orchard be grazed by small cattle, until the trees are of sufficient size to admit of being grazed by larger, without injury. I think it would be proper to keep down coarse weeds, briers, sprouts, &c. I am well convinced that there are some hardy native pear trees, that may be pruned and ploughed without being subject to blight; but I feel confident that most of the finest kinds of pears, would thrive best under the treatment I have described. I know, too, that there is a difference in soils, and that the same mode of treatment may not suit all situations. But, those who have not succeeded in raising pear trees, might try my method. My

opinion is, that the blight is produced by the excessive flow of sap, and that pruning and fallowing produce that effect. If, however, I had pear trees growing on hard poor land, I would fallow and manure; preferring rather to risk the blight, than let the tree die of poverty. But, when I had sufficiently manured, I would then cease fallowing.—Farmers' Register.

### ART. VIII.—Hedges — Osage Orange.

HITHERTO, attempts to construct live fences in this country have mostly failed, in consequence of the want of adaptation in the material to the circumstances of soil and climate. The thorn flourishes well in the humid climate of England, but in our hot and dry seasons its growth becomes feeble and stinted. The cedar and some other plants, though very ornamental, constitute weak barriers against the inroads of stock.

So many unsuccessful attempts to grow hedges, especially in the States north of us, have induced a general prejudice against that species of enclosure. Every person, however, is disposed to admit, that if a suitable plant for the purpose could be introduced, it would be an important acquisition. At present, each farm is obliged to have from a fifth to a third of its contents in timber, in order to maintain its enclosures. If efficient hedges could be substituted, the advantages would be obvious. A large portion of good land, now unproductive, might be brought into cultivation; and a great amount of labor might be saved, which we are now compelled to bestow on the present system of fencing—to say nothing of the improvement in the rural appearance of the country, which would be effected by doing away our unsightly log fences, and rearing hedges in their places.

It is gratifying, therefore, to be assured, that in one of our native plants; namely, the *maclura* or Osage orange, we are likely to realize this desirable object. The maclura is a deciduous tree, growing indigenously in Arkansas and Louisiana—is perfectly hardy in this latitude, and even as far north as Boston. For a number of years it

has been cultivated in the grounds of a few private gentlemen, and in some of the large nurseries. It is only recently, however, that its value has been appreciated, or any pains taken to propagate it ex-In its native habitat, it attains to the size of a tree of the second or third class; but in this latitude, its altitude is very moderate, seldom rising to the height of fifteen feet. Its great merit consists in the spreading manner of its growth, the denseness of its branches, and the armature with which they are furnished. Planted in hedge-rows, the maclura would never become unmanageable on account of its size - at the same time, its growth is sufficiently vigorous to make a fence in three, four, or at most, five years, from the seed. It may be asserted with safety, that on land of tolerable fertility, the labor and expense of perfecting a system of hedges, would not be greater than to keep our ordinary enclosures in good order, for the time required to construct them. When completed, this heavy item in every farmer's account would thenceforth be expunged.

The maclura is readily raised from the seed. Unlike those of the thorn, they require no preparation — on the contrary, they vegetate with certainty in two or three weeks after planting. Under tolerable care, the seedlings will grow two feet or more in height the first season; after which, they are fit to be removed from the nursery rows to the place designed for the hedge. I raised a number of plants the past year from the seeds, the produce of a tree growing in my garden, now eight or nine years old.

For an individual to engage in the business in earnest, it would be best for him to obtain the seed from the Southwest, rather than to purchase the plants from a nursery man. A few dollars would procure enough of the former, and pay all the expenses of transportation, to set a long line of hedge. The preferable mode would be to have them brought in the berries, from which they might afterwards be picked without much trouble. Fifty berries would yield at least a pound of seed, and a pound contains from eight to ten thousand grains. It is the practice to place the sets from twelve to fifteen inches apart, in a single row. These facts will enable any person to form a correct judgment of the number necessary to plant any given length of hedge.

But it is not to be expected, whatever may be the adaptation of any plant to the purpose of hedging, that it will, under a long time, be brought inte general use. The most palpable improvements are

slow in being adopted. A considerable portion of our country is moreover too much impoverished to admit of the successful rearing of hedges. They belong eminently to a state of cultivation where taste and industry are measurably combined. But if we have worn out fields, we have also fine districts of country, where their pleasing effects, as well as utility, would be most manifest. What an air of neatness and improvement they would impart to the finely cultivated farms on James river, both above and below Richmond, to those also on the Rappahannock, the Roanoke, and in many other sections of the State that might be designated with equal propriety. In most of these places, the lands are so valuable that there is now a great deficiency of timber; and, from necessity, they are therefore almost exclusively devoted to grain. Along the lines of canals also, where permanent fences are obliged to be maintained, there would be a great advantage in planting hedges at once. The idea that when fairly established, they will never need removal, would inspire a degree of security which cannot be felt by those persons who are in the habit of patching up decayed fences, and calculating the value of a rail in resisting the depredations of stock.—Virginia Farmer's Register.

#### ART. IX .- Shade Trees.

IT was Lord Bacon, we believe, who said that "a tree in full leaf was a more majestic object than a king in his coronation robes," and as he was a man competent in every respect to form a correct opinion of the matter, he may undoubtedly be considered right. We, untilled plebeian farmers, whose optics have never expanded at the sight of a throne or a crown, or looked on that animated piece of clay called a king, can perhaps form but a faint idea of the splendors of royalty, but we do know there is nothing in nature that combines more grace and beauty, than the wide spreading foliage of a majestic tree in the "leafy month of June." Gentle or simple, savage or civilized, all men, unless those in whom every trace of taste and sentiment is extinct, look on trees, whether in their native forests, or growing under the culturing hand of man, with a feeling of ad-

miration and delight. The freedom and ease with which their tapering and beautifully proportioned columns spring into the air—the regularity and finely adjusted curves of their arching branches—the broad and overshadowing roof formed by the intermingling masses of foliage, form a whole to which the most costly piles of human architecture are mean, and which constitutes a temple worthy of His worship who designed and created such examples of surpassing beauty.

We have long considered it as wonderful, that while this feeling of admiration of trees is so universal, it should have had so little influence in inducing men to assist nature in arranging and perpetuating this beauty. We seem to take a pleasure in destroying the last remnants of our once mighty forests, and as if their destiny was connected with that of the red man who once dwelt beneath their branches, with one hand we are pushing him beyond the bounds of civilization, and with the other dashing to the earth the dark woods that furnished him shelter and food. We lay the axe to the root of our magnificent forest monarchs with as little reluctance as if they were the growth of a year, and seem to forget that we in an hour can undo what nature requires centuries to perform; we seem to imagine that the world will end with ourselves, and that there will be no coming generations to require timber and fuel, and objects of grandeur and beauty to admire. That such a feeling should prevail among those who, like most of the farmers in our new countries, have been taught to consider the trees which covered their farms a nuisance, and the destroying of them a blessing, is not so passing strange; but that men, whose life has been spent in villages or cities, should, when domiciliated in the country, be so willing to cut down, and so unwilling to plant, is truly wonderful.

A man would almost as soon plead guilty to insanity, as confess to a non-perception of the beauties of spring, or a want of pleasure in highly cultivated grounds, shady avenues, or leafy whispering groves; yet because a woodland, or an avenue, or a cool shady walk, will not, like Jonah's gourd, spring up in a night, every one deems himself privileged to defer planting trees; and hence our naked dwellings and unprotected fields, our villages without coverts or shrubbery, and our cities with their ranges of brick and stone, but with their streets and squares unplanted and unornamented. There is a mistaken notion prevalent on the time it will take a tree to be-

come useful or ornamental. There are few young men who, if they would plant a tree, or a number of trees, would not live to take a pleasure in the work of their own hands, and find in the beauty they have imparted to their premises, if not in the increased amplitude of their purses, a full compensation. — Genesee Farmer.

### ART. X .- Morus Multicaulis.

"We observe by an extract from a letter to the editor of the Albany Silk Worm, from a gentleman in Troy, N. Y. that his Morus Multicaulis trees have withstood the late winter in that quarter, unprotected in the open fields, and come out undamaged even to the top bud."—Farmer and Gardener.

REMARKS. This intelligence must be gratifying to those who contemplate the culture of the Morus Multicaulis tree with the intention of manufacturing silk. Many doubts have existed respecting the capacity of the Morus Multicaulis to withstand our common winters, and especially the last winter, which for severity, sudden changes of weather, and destructiveness to trees in general, has exceeded that of any other winter perhaps within half a century. The apple, peach, quince, plumb, pear, cherry, and even the sturdy forest tree, and especially the oaks of one year's growth, have been much injured, and in many instances killed. The white mulberry, especially seedlings, have suffered severely. One person, within my knowledge, has lost nearly one hundred thousand seedling trees, although they were covered with earth and other substances abroad. We cannot go to the extent of the gentleman in Troy-but thus much we believe, that the Chinese mulberry has not suffered so much as any other tree. Among the many kinds of mulberry now cultivated, the Canton Multicaulis has withstood the late winter better than any other, and when the Manilla and Canton have stood side by side, or secured by the same protection, the Canton has come out unscathed. Next to the Canton, the Chinese seedling has been less injured than the Manilla Multicaulis, when both have had similar protection. We advocate the method of protecting the Multicaulis roots from the severity of winter by cutting them down every autumn to one or two buds above the ground, and covering

the stump with earth, or turf, or other substances; this method not only tends to preserve the root, but to increase the number of stalks and foliage the succeeding autumn. Standing water, however, or a body of ice, which, when melted, shall form a pool of water about the roots, is certain destruction to this kind of mulberry. The last winter was very unpropitious to trees, and where the stump of the Multicaulis had the earth drawn over the stump like a potato hill, of course a corresponding excavation was made in the vicinity of the root, where the water could settle and penetrate and destroy the tender fibres, and of course damage or destroy the whole, especially when the water became alternately frozen and thawed. We wish the gentleman of Troy had told us whether the earth about his mulberries was left level in the autumn, or whether the earth was drawn up about the root.

In the Connecticut Valley, winter before last, trees were left out during the winter, and only some portion of the tops killed, and that part which had not formed hard wood, the earth made level about the roots—whereas the last winter, to protect the root, the earth was drawn about the root as above described, leaving hollow places about each, and in some instances suffered severely. Under these circumstances it is suggested, that when roots are left out all winter, that the ground be made level about them, and if any covering to the stump be needed, let a small piece of turf, chip manure, forest leaves, or other substance, be spread over the stump.—Northampton Courier.

### ART. XI.—Bone Manure.

As some of your readers may be desirous, personally, to test the efficacy of Bone Manure, and yet be hindered by not being provided with the requisite drill, I have thrown a few hints together—the result of my own experience, and of information derived from good practical men—which may tend to encourage them in proving the utility of this valuable manure.

Bone manure should be placed within about two inches of the surface; and owing to the small quantity used per acre, the seed should be brought as near to it as possible, without immediate con-

tact, which is better to avoid. There is, of course, no mode so eligible to effect this, as a drill, working clean and well, and depositing, from separate hoppers, the dust and the seed: but experience has proved, that a result closely approximating to this, may be obtained by very simple means.

The soil being first reduced to its proper state for the reception of the turnip crop, in lieu of a last ploughing, let the land be laid up in banks; the bone manure to be cast on the land by broadcasts, followed by the roller, which will, of course, crumble in sufficient earth to cover the manure, without, by any means, obliterating the furrow: then run a single chep-drill, with the turnip seed in the furrow and cover the whole with a light harrow.

Some recommend depositing the bone with a shake box; and one farmer, of much experience in the use of bone manure, recommended me simply to sow dust and seed broadcast, and then cover the seeds, and lay the whole into furrow by the operation of the plough afterwards: but wherever it is intended to use bones extensively, nothing is so well as to have a proper drill for the purpose, which will repay its first cost again and again. My observations, therefore, are intended for those only who wish to make a first trial, and are unprovided with more efficacious means.

The value of an article can always be found by its extended use: and if we take this as our criterion, I know not where we can find any article, the use of which has become so extensive, or that has so increased in price, within the last twenty years. Before that time, bones were comparatively valueless; being used only in the manufacture of porcelain, smelling salts, ivory black, &c., and brought only a trifling price per ton. They are now imported, from all quarters; in many places, prohibitions and duties are levied to prevent their export; (see France and Belgium:) and they obtain about four times the price they did formerly; and yet, at the enhanced value, the use and manufacture of bone manure has increased, and continue to increase in all quarters.

Its price at present, in the north, where its use is chiefly known, is, I believe, twentysix shillings per quarter, the fine; and twenty-three shillings the coarse: and it is still the cheapest manure for turnips that can be found, as it bears mixing, in moderate proportions, with good vegetable mould, denshan ashes, soot, fine cinders, &c. Care should, however, be taken, that this admixture is not

already done to your hand; for which your best, and indeed, only security, is the respectability of the merchant.

To this cause is frequently to be attributed the cases of failure we sometimes meet with, although this again may be caused by the soil not being suitable, putting the manure too deep, or uncongenial seasons.

Frequently bones are used too sparingly, to allow us to expect to see much of their effects after the first year; but even sixteen bushels per acre have been evident not only in the turnip, but as well in the barley, and seeds succeeding; and if the price did not prevent the application in large quantities, as was the case in the first introduction of this manure (forty and fifty bushels per acre and upwards,) we should perceive a lasting benefit derived to the land from a liberal use of this the most lasting manure known. \_\_\_\_\_ Canterbury Journal.

ART. XII.—Influence of the Winters from 1834 to 1837, on Vegetation. By Sidney W. Andrews.

[Mr Sidney W. Andrews, of Montague, a gentleman of an inquiring mind, has furnished us with the following, as the result of his observations relative to the destructive effects of the last few winters, on forest and fruit trees.—

Greenfield Gazette.]

The winter of 1834-5 had a more serious effect upon the vegetable kingdom than any preceding winter I have noticed for the last thirty years. It may safely be said, that one fourth of the fruit trees in this region were destroyed, and the forest trees maimed and retarded in their growth. Very few peach trees survived, and the frost was so severe that in many instances, the bark of the apple trees were started, and the wood of young trees split open to the heart—the branches of older trees, such as survived, in the spring put forth sickly shoots, and the grain produced during the season was not more than one sixth of that of the preceding year. I noticed the white oak, which belongs to the hardest class of wood, shot forth its bud very late in the season;—in some instances which came under my observation, the bud from the time it began to swell, to the time that another was set for the succeeding year was

only ten days, the shoot being not half the length of that produced in 1834. The sassafras was mostly killed;—the locust, butternut, and other soft woods, where they survived, were very much retarded in their growth. The winter of 1835-6 was favorable for the roots of trees—the great depth of snow, keeping them warm, the frost having penetrated but a few inches into the earth on the opening of winter; but the spring opened bad, the snow lay long on the ground, and the season continuing cold, and vegetation not having recovered the shock given it the winter of 1834-5, the growth was very small. The winter of 1836-7 was unfavorable for vegetation. The frost in many places having penetrated from four to six feet deep, and continuing in the ground in many places until the early part of June, we may anticipate a loss, rather than a gain in vegetation, the present season.

Three more such winters as the three last which we have experienced, would nearly annihilate our fruit trees, and we might calculate on a great loss in our timber lands. The growth of 1835-6 was not equal to that of 1834, and it will require many years to repair the loss sustained by the three last winters. I examined this spring the heart of some locust saplings, of the four last years' growth, and found them to be black and spongy; and I have reason to suppose that had they been left, and cut down twentyfive years hence, they would have been found greatly decayed. Will not the woodman fifty years hence, find the timber less valuable than we do at the present day? But should the axe and the frost continue to lay waste as they have done the last few years, and the same apathy continue for its cultivation, the woodman will find no employment fifty years hence. It is to our forests that we have been indebted for two hundred years for our fuel and our shelter; and has it not been a source of wealth to New England? Regardless of those who must follow us, we unsparingly destroy what nature has given us. Had the aborigines possessed that determined hostility to the forests that we have shown, these settlements would not have had a being.

## ART. XIII. — Massachusetts Horticultural Society.

SATURDAY, JULY 1, 1837.

An adjourned meeting of the Society was held. The President stated that the principal business was to organize concerning the Anniversary.

On motion of Mr Walker, it was voted that a committee of five be chosen to take into consideration the expediency of an Address and Exhibition of Fruits and Flowers, on the next Anniversary, and the following gentlemen were chosen on that Committee:

Mr Samuel Walker, Mr Benjamin V. French, Col. Marshall P. Wilder, Mr Charles M. Hovey, Mr. Joseph Breck.

Capt. Alexander Parris, and Mr Samuel Hunnewell, were admitted subscription members. Adjourned to the next Saturday, 11 o'clock.

E. WESTON, Jr., Rec. Sec.

#### EXHIBITION OF FRUITS.

By J. L. L. F. Warren, Esq., of Brighton, — Methven Castle Strawberries, very large and beautiful, and of the most productive kinds. Also, fine specimens of Cucumbers.

For the Committee.

WM. KENRICK, Chairman.

#### EXHIBITION OF FLOWERS.

Our tables were this day decked with fine specimens of some of the gayest of Flora's productions. We hope our friends will send us a regular supply during the season of Flowers. We promise on our part to do all in our power to show them to the greatest advantage. Among the specimens this day exhibited, we noticed some new seedling plants, from the garden of Thomas Lee, Esq., of Brookline; Dahlias, from J. C. Howard, Woodland, Brookline; Roses, from Hawthorn Grove, Dorchester, by Mr John Donald, gardener to Col. M. P. Wilder; and also, some fine specimens by Mr John A. Kenrick, of Newton; Seedling Pinks, by Col. Wilder, and Messrs. William Miller and Samuel Walker, of Roxbury. Some of Mr Miller's Pinks were fine, and deserved a name.

Dahlias, - From J. C. Howard, Woodland, Brookline.-Queen

Adelaide, Boot's fine purple, Marshall's velvet, Foster's incomparable, all very fine specimens for the season.

From S. Lee, Esq.—Rhododendron maximum, Kalmia latifolia, Magnolia glauca.

Verbascum compactum, Cleome spinosa, Lupinius polyphillus, Lychmachsia dubia, Leptosyphon densiflora, Nemophilia insignis, Madia splendens, Penstemon, Stenactis speciosa, Sallandia bicolor, Lasthenia Californica.

By John A. Kenrick. — Pæonies, Whilleji, Humei, Fragrans, — roses variety.

Bouquets, — by Messrs. William Kenrick and S. Walker, containing many fine specimens of herbaceous plants.

For the Committee.

S. WALKER, Chairman.

SATURDAY, JULY 8, 1837.

#### EXHIBITION OF FRUITS.

By the President, Hon. E. Vose, Dorchester.—Two boxes of Tartarian and White Bigareau Cherries, and a box of Methven Castle Strawberries.

By James L. L. F. Warren, Brighton.—'Three boxes of Methven Castle Strawberries. The specimens above were large and perfect.

For the Committee.

B. V. FRENCH.

#### EXHIBITION OF FLOWERS.

By the Messrs Winships of Brighton. — Specimens of flowers, the product of seed collected by Prof. Nuttall, while on his recent excursion to Columbia River and California.

Phaulia California, Colinsia bicolor.

Dahlias variety. — Agripina, Russell's Maculata, Countess of Liverpool, Hanover Stripe, Emperor of Yellows, Daniel O'Connell, Dwarf Lilac, Picta formosissima, Royal William, Beauty of Chestnut Grove, Springfield Rival, Sable Queen, [both very fine,] Sir Walter's Scarlet Auratia, Purpurea, Lady Livepool, Miss Ramsden.

By Thomas Lee, Esq., of Brookline. — Rhododendron maximum, Kalmia latifolia.

Dahlias, — Thorburn's White, Columbine, New Calypso, Le Brilliant.

Verbascum compactum, Digitalis neroso, Madia splendens, Leptosyphon densiflora, do. androsaecus, Malva, Lasthenia Californica.

Climbing Tea or Double Ayreshire Rose, Marie Leonidas do., Narsette do.

By Dr J. C. Howard, Woodland, Brookline. — Dahlias var.—Foster's Incomparable, Boot's fine purple, Smith's do., Squibb's yellow, Queen of Wirtemburgh, Marshall's velvet.

By Col. M. P. Wilder of Dorchester. — A variety of Seedling Pinks, and a fine collection of New French Roses, among which we noticed Bobelina, Hybrid Camuset, Rose le Sage, Pallagiea, and Ball of Snow.

By Mr Samuel R. Johnson, of Charlestown. — Rose Triumph de Arcole, and Phlox Drummondi.

Fine Bouquets from Messrs Hovey & Co., of Cambridge, William Kenrick of Newton, and Samuel Walker of Roxbury.

S. Walker of Roxbury, also exhibited some specimens of Ranunculus Asiaticus, and seven varieties of Seedling Pinks, which he has named as follows:

Walker's Claudius, do. Mary Louisa, do. Estelle, do. Col. Wilder, do. Othello, do. Nealensis.

#### For the Committee.

S. WALKER, Chairman.

A meeting was held. The Committee appointed at the last meeting to consider concerning the Anniversary, reported that its was expedient to notice the same by an exhibition and address. A Committee of Arrangements was then chosen, consisting of the following gentlemen:

Mr Samuel Walker, Mr Isaac P. Davis, Mr Samuel P. Grosvenor, Col. Marshall P. Wilder, Mr E. Weston, Jr., Mr. Benjamin V. French, Mr D. Haggerston, Mr Charles M. Hovey, Mr Jonathan Winship, Mr Joseph Breck, Mr J. E. Teschemacher, Mr W. Kenrick, Robert Treat Paine, Esq., Maj. Henry Sheafe. Mr Samuel R. Johnson, Mr S. Sweetser, Mr Thomas Lee, Mr R. Manning, Dr J. C. Howard, Mr P. B. Hovey, Mr T. G. Fessenden, Mr L. M. Richards, Mr John A. Kenrick, Mr William E. Carter, Mr J. L. L. F. Warren.

Voted, To choose a Committee to write to some gentleman of science, to deliver an address—and the following gentlemen were made this Committee: Mr J. P. Davis, L. P. Grosvenor, E. Weston, Jr.

Voted, That the Library Committee be directed to procure the latest edition of Loudon's Hortus Britannicus, for the use of the Chairman of the Flowers Committee.

Messrs. C. & A. J. Downing of Newbury, N. York, were admitted members of the Society.

Adjourned to this day, two weeks, at eleven o'clock, A. M.

E. WESTON, Jr., Rec. Sec.

SATURDAY, JULY 15 1837.

#### EXHIBITION OF FRUITS.

Raspberries, — from Mr Thomas Mason's Vineyard, Charlestown, — White Antwerp. Also, beautiful red Raspberries, called Grapes, from their hanging in clusters — being a new seedling.

Gooseberries, — from J. L. L. F. Warren, Brookline, Roaring Lion, and one other variety.

Apples, — of last year's growth, from B. Guild — Pearmain, Russet, and one other kind, in as perfect a state of preservation as they were in January.

Tomatoes, - ripe, from S. Sweetser, Cambridge.

For the Committee.

L. P. GROSVENOR.

#### EXHIBITION OF FLOWERS.

There was much to admire, and many admirers, at our Rooms this morning. Our friends spread our tables with many charming things.

Messrs Winship exhibited fine varieties of the Passion flower, all of which were fine specimens, and some of them extremely beautiful: double flowering Ayrshire Rose, sometimes called Climbing Tea Rose; Œnothera glauca; Martagon lilly; Silene Virginica; Staphelia variegata, and Collinsia atrophylla, from California, by Prof. Nuttall.

By Charles Hood, Esq. — Liriodendron tulipifera.

By Col. M. P. Wilder. — Geraniums, Roses, Mimulus, Grandiflora and Schizanthus retusus.

By Dr J. C. Howard. — Fine Dahlias: the specimens show they are highly cultivated. There were other plants from Mr Howard, but we have mislaid our minutes of them.

By Thomas Lee, Esq. — Dahlia: var. Columbine; its color is splendid, but it lacks the other good qualities to make a good flower.

By Mr Thomas Mason. — Dahlias: var. King of the Whites, Dennisii, Matilda, Bunker Hill, &c. Roses, Carnations, and some very fine specimens of Scabiosa.

The Messrs Hovey displayed good taste in the arrangements of their bouquets, which contained many good, although not rare, specimens. It gives us pleasure to see nature and art thus united.

Bouquets from Messrs Sweetser, Kenrick and Walker. Seedling Pinks; var. Walker's Cushingtonia, do. Othello, do. Claudius.

For the Committee.

S. WALKER, Chairman.

SATURDAY, JULY 22, 1837.

#### EXHIBITION OF FRUITS.

The tables of the Society were well filled to-day with a variety of fruits. The Gooseberries in particular we have never seen look finer. They were very large and perfectly free from the mildew, which has been so destructive to the fruit in former years.

The Downer Cherry exhibited by Mr Downer, who originated this variety, was excellent fruit, large and of rich flavor. The specimens were from the original tree, which, Mr Downer informs us, has never failed to produce a good crop of fruit.

From J. G. Thurston, Lancaster. -- very large Gooseberries -- not named.

From J. L. L. F. Warren. — late scarlet Strawberries, desirable as a late variety. Large and handsome Gooseberries of the following sorts: Washingtonian, Lancaster Lad, and Fair Maid of Perth. Mr Warren also exhibited a fine head of early Cauliflowers.

From J. T. Buckingham. — beautiful specimens of the red and white Antwerp Raspberries, and Champagne pale red Currants.

From Mr. Mason, Charlestown. — seedling grape Raspberries, large and fine. Also, white Antwerp Raspberries, and several varieties Gooseberries, all very large.

Russet Apples in good preservation, from the farm of J. Mackay, Weston.

For the Committee.

P. B. HOVEY, JR.

#### EXHIBITION OF FLOWERS.

From Jos. Breck & Co. — Dahlias: Coreopsis, variety atrosanguinea. Superb striped Marigolds; seedling Delphiniums.

From Mr J. R. Johnson. — Perpetual Roses, var. Triumph of Luxemburg, Triumph d'Arcole, Countess of Albemarle, and some fine Carnations.

By Thomas Mason of Charlestown. — Bouquets, Dahlias and specimens of other fine things. We noticed among his Dahlias, Village Maid, Picta, Dennisii, King of the Whites and the Globe. Nerium? This was a new variety to us. If our friend Mr. Mason will furnish us with a list of his new specimens, he will oblige us.

By Mr Sweetser. — Nerium, two varieties, both double; one highly scented and fine shape. A variety of other flowers.

From Dr J. C. Howard, Woodland, Brookline. — Dahlias: var. Brown's Ophelia, Boot's fine purple, Globe, Queen Adelaide, Squibb's Yellow, and Prince George.

From Col Wilder. — Dahlias: var. Lord Liverpool, Well's Dictator, Lady Fordwich, Douglass Criterion, and Barrett's Susannah.

By S. Walker. - Carnations and other flowers.

This day the Messrs Winship presented Carnations: Yucca filamentosa; Passion flowers, and a variety of Dahlias; some of them very good; but the season has not yet arrived to expect prime specimens. When it does, we anticipate to see the Village Maid, the Salem Beauty, and other beauties from the garden of the Messrs Winship of Brighton.

For the Committee,

S. WALKER, Chairman.

An adjourned meeting of the Society was held. On motion of Mr Walker, the following gentlemen were added to the Committee of Arrangements.

Mr Russell of Mount Auburn, Mr Mason of Charlestown, Mr. D. Murphy of Roxbury, Mr Cheever Newhall, Mr Nathaniel Daven-

port, of Milton, P. Sawyer, Esq., of Portland, Jacob Field, Roxbury, A. D. Williams, Samuel Pond, J. P. Bradlee.

Mr Davis of the Committee appointed to select some gentleman of science, who could favor the Society with an Address—reported that Hon. William Lincoln of Worcester, has accepted the appointment. The report was unanimously accepted.

Mr Caleb Eddy was chosen a subscription member. Adjourned to this day two weeks.

E. WESTON, JR., Rec. Sec.

## ART. XIV .- Miscellaneous Articles.

STRAWBERRIES .- Every body loves this most delicious of fruits. In milk, with cream, and for preserves, it has but few equals, and no superior. Good strawberries gratify several of the senses at once, and combine, what in some cases are widely separated, health and pleasure. Strawberries too are easily cultivated, and, with a little pains in procuring early and late varieties, they may be enjoyed in perfection for a long time. Yet little as is the cost or trouble required to enrich a garden with a plant of this fine fruit, few it seems are willing to undertake it, and deprive themselves and their fami lies of this wholesome and agreeable fruit rather than spend the requisite yearly half-day in digging and planting vines. Still, men who will not procure a strawberry vine for their garden, will permit their children to ramble over their own and their neighbors' meadows, trampling down the grass, acquiring predatory habits, and doing other injuries, besides spending far more time than would be required to produce an abundant supply of berries at home.

But perhaps some will say they have tried vines in the garden, and found that though they produced plenty of flowers they bore no fruit, and of course they gave up the bed as worthless. Very likely this may have been the case, for strawberries are of that class of plants which, in the language of the oldest botanists, produce male and female flowers, or flowers which do not produce fruit as well as those that do. Every one has noticed in the common strawberry of the fields, patches of vines that flower abundantly but produce no fruit, and so it is with the garden strawberry. Observation,

however, shows that the non-bearing flowers are usually much the largest and fairest, while those that produce the fruit are comparatively small, and the flower leaves or petals curled; and this distinction may be taken advantage of by any one, however ignorant he may be of the botanical nature of flowers. The best way, and the one that will effectually guard against disappointment in selecting bearing plants, is to mark the best bearing roots in such a manner that no mistake can occur when the proper season for transplanting arrives, which is either very late in the fall, or as early in the spring as the state of the garden will admit.

When once the strawberry has been transplanted, and placed in the plat where it is to remain, the only care required is to keep the ground clean, and free from weeds; and to cut off the runners that shoot out from the vines, either by pinching them off with the thumb and finger, or clipping them with a pair of scissors. With these precautions, and the occasional digging over the ground be tween the rows of the plants, and manuring with fine well rotted manure, a strawberry bed will last for years, affording the best of fruit, and producing it in quantities surprising to one who has not tested its bearing qualities. Our advice then to the farmer is,—to plant a supply of strawberries in his garden—to send his children to school—and by all means, if he does not wish at mowing time to be vexed in spirit, or meet the maledictions of his neighbor, to keep his 'little ones' out of all meadows whatever."—Western Agriculturist.

Boil your Garden before you Plant it. — In order to kill the eggs of insects which may be in the soil — the larvæ or the insects themselves which may do mischief, it has been found an excellent plan to drench the bed to be planted with scalding hot water. A friend informed us that a neighbor has for a number of years been in the habit of boxing up his beds snugly with a board, sunk on each side a few inches and projecting above it a few inches, and then pouring scalding water over every part of it. By this management he has never been troubled with grubs. This year he neglected so doing, and his garden has been assailed with insects marauders and nearly destroyed. For small plats of ground this mode may do well, but it would be no small job to boil a large one. — Maine Farmer.

### QUINCY MARKET.

[Reported for the Horticultural Register.]

APPLES, Old,	-	-				-		barrel	6	00		
New, -		er.	-		-		-	peck		40		50
Dried,	-	-		-		-		pound		06		08
ALMONDS, (Soft shell	led)		-		-			do.		7		8
(Hard)	- ′	-		-		-		do		4		5
BLUEBERRIES, '-		-	_				-	quart		25		
BLACKBERRIES,	-	-				-		do.		25		
BEETS, -		_	-		-			bunch		6		
BEANS, String,	-	-		-				peck		17		25
Shell, -		-	-		-			quart		25		
CABBAGES, -	-	_		-		-		dozen		37		50
CAULIFLOWERS.		-	-		-		-	a piece		12		25
CARROTS, -	_	-		_		_		bunch		6		
CUCUMBERS, -								dozen		12		
CHERRIES,		_		-		_		quart		12		
CURRANTS, (Red an	d Wi	nite)	_					do.		6		8
(Black)		,,,,,		_		_		do.		12		
CORN, (Green) -							-	dozen		37		
FILBERTS, -		_						pound		3		4
GOOSEBERRIES,					_		_	quart		12		
LETTUCE, -		_						head		3		
LEMONS,		_	_					dozen		25		37
LIMES, (pickled)		_	_	_		_		quart		37		
ORANGES, -		_	_	_	_			do.		67		
ONIONS, -								bunch		6		
POTATOES, -		_	_		_			bushel		67		75
PEAS, -	_					_		- do.		50		75
PINE APPLES		_						hundred		00		00
PEARS,		•			_	_	_	peck		00		
PEA NUTS,	_	_					_	bushel		25		
RASPBERRIES,		_	-			_		box		25		
STRAWBERRIES, -		_		•				do.		31		
SQUASHES, (Long W	nwind	N .	_		-			dozen		12		
(Early Sc	allen			-		•		do.		12		
(West Ind		)	•					pound		3		4
TOMATOES, -	iaj				. '			dozen		3 <b>7</b>		50
TURNIPS, -			•					bunch		6	•	0
WATERMELONS.	•	•		-				each		25		50
WALNUTS, (English)			•		-			pound		5		6
WALINGTS, (English)		•		•		-		pound		U		U

We have never seen a greater abundance of vegetables at this season of the year in market than is now exhibited, nor of better quality. Potatoes almost the staff of life, are getting quite plenty. The luxury, Tomatoes, are beginning to appear in considerable quantities, but it is said they are mostly from New York. Green Corn appeared today for the first time this season in the Stall of J. Miller. New Apples and Watermelons from Virginia, and new apples from this vicinity are to be found in abundance. All kinds of small fruit and especially Gooseberries, are very fine and plenty. We noticed a few Old Apples in excellent state of preservation, but in small quantities. Lemons and Oranges are scarce, and hardly to be obtained by the box; arrivals of fruit are daily expected. The first Shell Beans for the season are offered today at the Stall of Tooms & Staples.

Boston, July 29, 1837.

# HORTICULTURAL REGISTER.

AND

### GARDENER'S MAGAZINE.

SEPTEMBER 1, 1837.

ART I .- Fruit and Fruit Trees. Introductory Remarks.

Most fruit is in a great degree nutritious; the best kinds are a pleasing luxury, and the greater part, when ripe and in a perfect state, and used with moderation, are not only inoffensive, but beneficial to health.

The art of growing and propagating fruit trees and good fruit, will be found to be plain, simple, and easy when rightly understood, and in no wise difficult to attain; but it has not received the attention it deserves, and consequently fruit trees consist, in a great measure, of casual growth, or such as are the result of careless, unskilful management, and are either stunted, or diseased, or both, and bear fruit which is unsound or inferior in quality, and the wood is of little value for timber or fire wood.

Trees, when stunted from the seed or afterwards, can rarely be restored to that vigor of growth which they have lost; and when kept too long in nurseries in a crowded state, which prevents their growing, they become too old to transplant, and either die in the operation, or continue dwarfs ever after.

Trees are frequently grafted and budded, not only when stunted or diseased, but when too large and old, and a great number of grafts stuck all over the trees without regard to being placed in the leading and best placed limbs. The grafts may safely, as is the practice, be warranted, as they will live; but the natural stock will continue to form the bulk of the top and bearing branches, and the

graft will reman diminutive and bear fruit in proportion. Twenty-five grafts well placed are better than 100 placed at random:—ten grafts judiciously placed in a tree of moderate size, will change the whole top in a few years; where 200 grafts scattered all over a large tree, will not materially change its top or its fruit.

No person can, therefore, expect to reap any advantage from grafting, unless on small and middle sized trees, and such as are sound and vigorous: all others should be cut down as cumberers of the ground.

Pruning and training are much neglected, or very unskilfully done—making trees of uncouth shape and condition. Trees, when hollow, are in a rapid state of decline; they will soon rot down. They are made so, in most cases, by pruning off limbs and branches, leaving stumps on the trees; these rot off, leaving a hole in the tree, which admits water and soon rots and renders it hollow. Haggling off limbs with an axe has the same tendency. Pruning should always be done by cutting or sawing off limbs or branches smooth and even with the trunk or main branch from which it is taken. The wound will then soon heal over and be covered with bark, which is prevented by stumps or snags being left, as the bark cannot grow over dry snags.

Success in growing and propagating fruit trees depends, like every other branch of business, on practical skill, how to do it, and industry and perseverence in the performance. When you plant an orchard, or single tree, plant sound, vigorous young trees, and no other than those you know to be such, either by having raised them yourself, or, if procured from a nursery, on such person's representations and assurances as you can safely rely. If you are the owner of trees bearing common or inferior fruit, save, in general, none but the sound, small and middle sized, which graft with the best kinds of fruit. Regulate all by pruning so as to form full, neat tops, suitably open to light and air; keep the earth around, and as far as the roots extend, mellow and suitably rich; secure them well by staking or boxing; water them a little in droughts, until they have taken root.

Having thus given a a general view and outline of the subject, I shall now proceed in detail to describe the method of producing sound, hardy, durable trees, and good healthy fruit, and of making the business successful, agreeable and profitable.

On the growth and propagation of Fruit Trees, Shrubs and Vines.

These may be propagated, 1. By grafting; 2. By budding or inoculation; 3. By cuttings and layers; and 4. From seed.

#### SEASON FOR EACH.

Grafting must be done in the spring, and may be performed as early as the middle of March, and as late as the first of June.

Budding may also be performed in the spring after the bark peels freely, with buds of the previous season's growth, or in summer and autumn after the buds of the same season have attained their growth, which is preferable.

Trees, cuttings and layers must be planted in the fall after frosts and before the ground is frozen, or in the spring after the frost is out and before vegetation has advanced much, which is also a proper time for pruning.

Seed should be planted so late in the fall as not to vegetate but little, if any, or so early in the spring as to have the advantage of the whole season to grow and ripen in, to withstand the winter frosts.

#### GRAFTING AND BUDDING IN GENERAL.

Grafting may be performed on most kinds of trees on large or small stocks. Different methods of grafting should be used according to the size of the stock. It may be done in any manner by which the scions and stocks can be united. Those methods most in use will be noticed. Budding will only succeed on small stocks of vigorous growth, from the size of a yearling shoot to half an inch, and not exceeding about threefourths of an inch in diameter.

The apple and pear succeed well either by grafting or budding. The peach, apricot and nectarine seldom fail when budded, but rarely succeed by grafting.

The plum and cherry take without difficulty by whip grafting, which is the best method to propagate them; they may also be propagated with tolerable success by budding (the plum more readily than the cherry,) and likewise by cleft grafting, when you succeed in splitting the stick without splintering the wood or injuring the bark, which can seldom be done.

Grafting and budding, for the most part, can only be practised with success on stocks of the same kind with the bud or scion. That is to say, the apple on apple stocks, pear on the pear, the cher-

ry on the cherry, &c. Peaches, apricots and nectarines may be propagated on each other, and together on the same tree. The apricot succeeds well on the plum, and is more durable than on the stock of its own kind, or on the peach or nectarine, but not of so quick growth. The peach and nectarine may also be propagated on the plum, but will outgrow the stock unless a plum stock be used growing equally or nearly as fast. Trees of the common small black and red cherry, make excellent and perhaps the most durable stock for cherries of all kinds. The quince and the pear may be grafted on a thorn stock, &c.

#### GRAFTING.

Scions for grafts may be cut at any time in winter, and even late in the fall. The proper time is in February or March, before or at the time the buds begin to swell or vegetate; buds, in this respect, are like kernels of grain, if disturbed when they swell and sprout, they become of slender and sickly growth, and rarely recover their natural vigor. Cut for grafts shoots of the last spring's growth with a little of the two year's old wood. Take your grafts from fruitful trees, bearing good fruit of the kind; that is, if from a pippin tree, let it be from such as bear the best of pippins. The best grafts are those about the size of a pipe stem, taken from bearing branches, and not of side shoots or suckers, nor of the rank growth of the top of trees; these are apt to continue their rank growth, and outgrow the stock, and are not so soon in bearing, nor so fruitful; if too slender they will not be thrifty, nor take well. Tie up the grafts of each kind by themselves, with some distinguishing mark; put them in a cellar or out house, to keep them from being saturaed, or dried up, or frost bitten; set in a box of earth onethird their length, the earth kept moderately moist by occasional sprinkling, to keep them plump and prevent their shrivelling, but not so wet as to cause them to sprout.

Scions may be used for grafting, fresh gathered, at any time during the season of grafting before the buds open to leaf; early gathered grafts will, however, take more readily.

Take eight ounces of pure, transparent rosin, free from sediment, about two or three ounces of bees wax, and lard of half the size of a hen's egg, melt them over coals or a slow fire, stirring the composition with a stick; after thoroughly mixed and melted, empty it in-

to a pail of cold water, rub some lard over your hands to prevent its sticking to them, and work it together thoroughly, as shoemakers do their wax. If the composition is too hard and does not work freely when making or while using it in grafting, rub over it more lard and work it in as before; if too soft add rosin, and so on until it becomes suitable for use.

#### CLEFT GRAFTING.

Cut down all diseased and stunted trees, and graft those only which are healthy and thrifty, of not exceeding six or eight inches in diameter, in some of the leading, best placed and thriftiest branches on the tree, with a view to changing the whole top. Trees of a large size may be grafted, and partially, and in some cases wholly changed, but not generally, without a great deal of labor and attention. Saw off the branches for stocks to graft on, at smooth places where they split well, and are in diameter of from one to two inches, prune the tree sufficiently to give room and air to the grafts, and gradually to force the juices of the whole tree into the grafts. Continue pruning each tree yearly, at any leisure time in the winter or spring, giving sap and air, and making room for the grafts as they grow, in such manner that if the grafts are of vigorous growth, in the third season to have cut out all except the grafts, and formed a new top. When limbs are taken off in pruning, it should be done with a saw or chisel, not an axe, and if large limbs a coat of tar, paint or the composition mentioned, put over the wound.

Having the stocks prepared as above, and being furnished with grafts and the composition, with a case knife or other convenient instrument and hammer, split the stock in the middle, drive in a wedge of hard wood or iron of six or eight inches in length, and open the split so as to admit the graft freely, prepare the grafts, either all for the same tree, or one by one as used, by paring off about an inch and a quarter of the end of the graft or scion to the shape of a wedge, leave that side of the graft which is to be put towards the centre of the stock of equal thickness with that part which is to be towards the outside of the stock, with a view that the pressure of the stock, when closing upon the graft, be on the inside and not on the outside of the graft, where it is intended to unite with the stock; the outside if a little open, will facilitate the communication of the sap from the stock to the graft; but if closed

up tight, may prevent such communication and endanger the graft; insert the graft as far as cut in wedge form, matching the wood of the graft and wood of the stock without regard to the outside or surface of the bark on either; take out the wedge with sufficient care not to disturb or displace the graft. To stocks a little over an inch in diameter, one graft is sufficient, if larger, two are necessary, leaving on every graft from two to four buds. Finish the work by covering the crown of the stocks and the splits on each side, whether containing a graft or not, with the composition about the thickness of wrapping paper, by drawing it into strings over them, and smoothing it down lightly with your finger or thumb, covering the whole perfectly tight, to exclude air and rain, and more especially to prevent the sap from running out. The sap being confined, will force its way to the graft, which will readily receive it.

Stocks with only one graft will be improved, by having the corner opposite the graft pared down to about the middle of the graft. It will enable them to heal over sooner, without leaving defects.

If the stock split uneven, cut it a little to fit the graft. If the bark splits from one side of the stock and adhere to the other, cut it down even with the wood, and match the graft to that side only, in case the other is too badly injured.

The grafts should be examined occasionally, and the shoots from the stocks ought not to be suffered to acquire a luxuriant growth, but gradually thinned out and cut away as the graft acquires growth and strength to take the juices of the stock.

Let the limbs or stock for grafting be cut off, when convenient, above and near small branches or shoots, to be left at first to draw the sap.

If the above directions are substantially adhered to, few grafts will fail; and a middle sized tree of vigorous growth, may have the top changed, and in a fruit bearing state, in about three years.

#### WHIP GRAFTING.

This method is particularly calculated for nurseries, and is most expeditious and advantageous on all kinds of young trees, (except the peach, apricot and nectarine, on which budding may be considered, at all times, preferable) and is peculiarly adapted to the cherry and plum, and all such as do not split well. It may be performed near the ground, or at the height of five or six feet, near

where you intend to form the top, or in limbs from the thickness of a pipe-stem to about threefourths of an inch, and too small to cleft graft; and the top of young trees having such limbs, may have their top changed by this method, as large trees by cleft grafting; and if the tree have some large limbs to cleft graft, but not many it may be partly cleft and partly whip grafted. The manner is this: provide yourself with the composition before mentioned, soft woollen yarn, and a sharp penknife; begin the work by cutting off the head of the stock, at some smooth part, by one clean slanting cut upwards, so as to form a slope on one side about an inch and a half or two inches in length, and make a small slit from near the middle downwards, to receive the tongue of the scion; then prepare the scion, by cutting it with three or four buds, preferring the lower or thick part, and cutting the lower end on one side also in a sloping manner, the length of and to fit the slope of the stock, as if cut from the same place, that the rinds of both may join, as nearly as possible, in every part; then make a slit upwards in the slope of the scion, so as to form a sort of tongue, to fit that made in the slope of the stock, which insert therein, so that the rinds of both may join together, or on one side, if the stock is larger than the graft; then bind the ports together with the woolen yarn, bringing it round the stock and graft moderately tight, and fastened accordingly; make a plaster of the composition between your fingers and thumbs, and wrap it round the stock and graft over the ligature, squeeze it in your hand, so as to make it snug and tight, to keep the sap and exclude the rain and air, particularly at the ends.-When the buds on the grafts have grown four or five inches, which will be about the middle of June or earlier or later, according to the season, the ligature becomes too tight, and will endanger the grafts; -- place the point of a knife on the upper side of the bandage or plaster, press it down through the composition and threads so as to cut them all in two, and take off the bandage and plaster entire. If the stock is jarge, and the guaft is matched and united only on one side, leaving the other side exposed, put the plaster taken off, or a little composition, over the exposed part.—Poughkeepsie Journal.

## ART. II .- The Fig Tree.

THE fig tree is evidently a native of that part of Asia, where the garden of Eden is generally said to have been situated, as it is the only tree particularly named in those passages of the Bible, which relate to the creation and fall of man. 'And they sowed fig leaves together and made themselves aprons.' It is a fruit that appears to have been highly esteemed by the Israelites, who brought figs out of the land of Canaan, when they were sent by Moses to ascertain the produce of that country.

The fig tree is often mentioned both in the Old and the New Testament, in a manner to induce us to conclude that it formed a principal part of the food of the Syrian nation. In the twentyfifth chapter of the first book of Samuel, we read, that when Abigail went to meet David, to appease him for the affront given by Nabal her husband, she took with her, among other provisions, a present of two hundred cakes of figs.

When Lycurgus banished luxury from Sparta, and obliged the Spartan men to dine in one common hall, to enforce the practice of temperance and sobriety, every one was obliged to send thither his provisions monthly, which consisted of about one bushel of flour, eight measures of wine, five pounds of cheese, and two pounds and a half of figs.

The Athenians were so choice of their figs, that it was forbidden to export them out of Attica. Those who gave information of this fruit being sold contrary to law, were called sykophantai, from two Greek words signifying the discoverers of figs; and as they sometimes gave malicious information, the term was afterwards applied to all informers, parasites, liars, flatterers, imposters, &c., from whence the word sycophant is derived.

The story of Romulus and Remus being suckled by a wolf under a fig tree, proves that this fruit must have been early known in Italy.

The Egyptians and Greeks held this fruit in great estimation; it was their custom to carry a basket of figs next to the vessel of wine used in the *Dionysia*, or festivals in honor of Bacchus; and it is related to have been the favorite fruit of Cleopatra, who was the most luxurious queen the world ever produced. The asp with

which she terminated her life, was conveyed to her in a basket of figs.

Saturn, one of the Roman deities, was represented crowned with new figs; he being supposed to have first taught the use of agriculture in Italy. There was a temple in Rome dedicated to this god, before which grew a large fig tree. The vestals, when they removed this tree in order to build a chapel on the spot, offered a propitiatory sacrifice; this happened about 268 years after the foundation of the city.

The fig was a fruit much admired by the Romans, who brought it from most of the countries they conquered, and had so increased the varieties in Italy, by the commencement of the christian era, that Pliny has furnished us with a description of twentynine sorts that were familiar to him. He says, 'figs are restorative, and the best food that can be taken by those who are brought low by long sickness and are on the recovery.' He adds, 'that figs increase the strength of young people, preserve the elderly in better health and make them look younger and with fewer wrinkles. They are so nutritive as to cause corpulency and strength; for this cause,' continues he, 'professed wrestlers and champions were in times past fed with figs.' This naturalist mentions the African figs as being admired; but says, 'it is not long since they began to grow figs in Africa.' These appear to have been of an early kind; for we find when Cato wished to stimulate the senators to declare war against Carthage, he took an early African fig in his hand, and then addressing the assembly, he said, 'I would demand of you how long it is since this fig was gathered from the tree?' and when they all agreed that it was freshly gathered, 'Yes,' answered Cato, 'it is not yet three days since this fig was gathered at Carthage; and by it, see how near to the walls of our city we have a mortal enemy.' With this argument he prevailed upon them to begin the third Punic war, in which Carthage, that had so long been a rival to Rome, was utterly destroyed. 'The Lydian figs,' says Pliny 'are of a reddish purple color; the Rhodian, of a blackish hue; as is the Triburtine, which ripens before others. The white figs were from Herculaneum, Albicerate and Aratian; the Chelidonian figs are the latest, and ripen against the winter; some bear twice a year, and some of the Chalcidian kind bear three times a year.' The Romans had figs from Chalcis and Chios, and many of their varieties, it appears

were named from those who first introduced or cultivated them in Italy. The Livian fig was so named after Livia, wife to the emperor Augustus, who, it is said, made an unnatural use of it to poison her husband.

The fig tree is a low shrub naturalized in Italy and the south of France, and enduring the open air in the mildest parts of Britain and the United States. This tree in France and Italy, grows as large as our apple trees, but in England and this country seldom exceeds two yards in height; the trunk is about the thickness of a human arm; the wood is porous and spongy; the bark ash colored; the branches smooth with oblong white dots; the leaves annual in the temperate zones, but perennial within the tropics, cordate, ovate, three or five lobed, thick and the size of the hand. The fruit is a berry, turbinate, and hollow within; produced chiefly on the upper part of the shoots of the former year, in the axils of the leaves, on small, round peduncles. The flowers are produced within the fruit; what is considered as the fruit being a common calyx receptacle; the male flowers are few, and inserted near the opening, in the extremity of the receptacle, or fruit; the female flowers are very numerous, and fill the rest of the hollow space within. The greater part prove abortive, both with and without the process of caprification. The fig tree is distinguished from all other trees, with which we are acquainted, by its bearing two successive and distinct crops of fruit in the same year, each crop being produced on a distinct set of shoots; but this climate rarely allows the second crop to come to maturity, except where they are forced by hot house cul-

The caprification of figs was practised by the ancients in the same manner as it is now attended to by the inhabitants of the Archipelago; and it is described by Theophrastus, Plutarch, Pliny and other authors of antiquity. It is too curious a circumstance in the history of the fig tree to be omitted, as it furnishes a convincing proof of the reality of the sexes of plants. In the cultivated fig, the receptacles are found to contain only female flowers, that are fecundated by means of a kind of gnat (culex L.,) bred in the fruit of the wild fig trees, which pierces that of the cultivated, in order to deposit its eggs within, at the same time diffusing within the receptacle the farina of the male flowers; without this operation, the fruit may ripen, but no effective seeds are produced. Hence it is,

that we can raise no fig trees from the fruit of our gardens, having no wild figs to assist the seed. They are consequently raised by cuttings, layers, suckers, roots, and by ingrafting; the most general method is by layers or cuttings which come into bearing the second and even the first year.

In many parts of the Grecian Islands, the inhabitants pay such attention to the caprification of the cultivated figs, that they attend daily for three months in the year to gather these little flies from the wild fig trees in their gardens, by which means they not only get finer fruit, but from ten to twelve times the quantity; thus one of the most minute insects is, by the attention of man, made a principal cultivator of fruit.

It is a curious fact, that freshly killed venison, or any other animal food, being hung up in a fig tree for a single night, will become as tender, and as ready for dressing, as if kept for many days or weeks, in the common manner. We are told of a gentleman, who made the experiment of suspending a haunch of venison which had lately been killed, in a fig tree when it was in full foliage, at about ten o'clock in the evening, and was removed in the morning before sunrise, when it was found in a perfect state for cooking; and he adds, that in a few hours more, it would have been in a state of putrefaction.

We import the best dried figs from Turkey, Italy, Spain and Provence. In the south of France, they are prepared by dipping them in scalding hot lie, made of the ashes of the fig tree, and then dried in the sun.

The most suitable kind to raise in Great Britain or the northern parts of the United States, is the Brunswick fig, (Ficus indica.) In a south east corner, trained against a wall, it ripens in England by the middle of August, and about a month later in New England. It is necessary, however, in this country, to secure it from the frosts during the winter, and to remove it as early in the spring as the season will admit. The leaves are very deeply five lobed, the lobes narrow, and of nearly equal width. The fruit is very large, obovate, fleshy, with an unusually oblique apex. The eye is rather depressed. The stalk short and thick. The skin pale green on the shaded side with a tinge of yellow; next the sun, dull, brownish red, sprinkled with small, pale brown specks. The flesh is pinkish in the interior, nearly white towards the skin, but chiefly

semi-transparent reddish brown, extremely rich, sweet and highly flavored.

The fig is cultivated in Great Britain, and in this country entirely for the dessert, but in fig countries, it is eaten green or dried, fried or stewed, and in various ways, with, or without bread or meat, as food. Abroad the fig is introduced during dinner, as well as at the dessert. In common with the melon, it is presented after soup; and the person who cuts a fig, holds it by the small end, takes a thin circular slice off the large end, and then peels down the thick skin of the fruit in flakes, making a single bonne bouche of the soft interior part.

For medical purposes, figs are chiefly used in emollient cataplasms, and pectorial decoctions.

The wood of the fig tree is of a spongy texture, and, when charged with oil and emery, is much used in France by locksmiths, gunsmiths and other artificers in iron and steel, to polish their work. This wood is considered almost indestructible, and on that account was formerly used in Egypt and other Eastern countries, for embalming bodies. The milky sap of this tree may be used as rennet, and for destroying warts.

We shall conclude our account of the fig tree, by the well known story of Timon of Athens, who was called Misanthrope, for his aversion to mankind and to all society. He once went into the public place, where his appearance as an orator, soon collected a large assembly, when he addressed his countrymen by informing them that he had a fig tree in his garden, on which many of the citizens had ended their lives with a halter; and that, as he was going to cut it down, he advised all those who were inclined to leave the world to hasten to his garden and hang themselves.

ART. III.—On rendering Pear Trees and other Fruit Trees fruitful, by operating on the Borders, and by Natural Training. By Mr Robert Hiver.

THERE are few subjects in horticulture which can be more acceptable to your readers than a system by which good crops of fruit may be obtained from pear trees planted against the east and west

walls in gentlemen's gardens; the bad crops these trees have afforded have been proverbial ever since I can remember; and the unnatural schemes which are now resorted to, such as strangulation, ringing, depressing of the branches, and reverse-grafting, show that a good system of cultivation is not yet established. This failure has generally been imputed by gardeners to the climate; but as the trees are seldom without fruit at the extremity of the branches, the supposition may be considered erroneous.

It is about twenty years ago since I noticed a brown Beurrée pear tree, trained against the east front of a farmer's cottage. This tree grew upon a limestone rock, where there was very little earth, yet it never failed to yield, yearly, plenty of large and well-flavored fruit. From what I observed of this tree, it appeared evident that the rich and deep border, usually prepared by gardeners, was decidedly wrong, as the plants in this case generated too much sap, which always induces disease and barrenness; and, I believe, it will be found in the tree, as in the human constitution, that the state of health consists in the medium between emptiness and repletion. Sir H. Davy has shown the utility of stones in agricultural crops; and I have found them exceedingly beneficial in the formation of fruit-tree borders; they prevent the accumulation of water in very wet weather, and also retain sufficient moisture for the purposes of the plant in dry seasons. In 1813, I replanted an old pear wall, 240 ft. long: the border for these trees was 12 ft. wide, and only 26 in. deep, S in. of which were filled with stones, such as could be most readily procured in the neighborhood, and the remaining 18 with the mould which composed the old border.

By this scanty supply of earth for the roots of these plants I have succeeded in obtaining a fruitful and healthy growth, equally remote from debility and luxuriance; and by this simple process I procure fruit all over the tree, as regularly as if it had been mechanically placed, both plentifully up the main stem, and on the lowest horizontal branches. My trees are fan-trained in the best manner; the shoots are kept as uniform and straight as the plications of the instrument from whence the term is derived, and, when the fruit is full-grown, exhibit one of the most interesting scenes to be met with within the confines of a garden.

With regard to pruning, the knife should be used as sparingly as possible; I conceive it to be as injurious to this tribe of fruit trees,

as the lancet is to animal life; it creates those inconveniences which it is employed to remove: whoever indulges in its free use, most certainly defeats his own purpose. Let any man who is inclined to dissent from this opinion, consider the common thorn confined in a hedge, where it annually undergoes the operation of clipping, and the shrub in its primitive growth, and he will want no arguments to convince him of the impropriety of the practice. But my plants require very little assistance from the knife: they make no breastwood, the energies of the tree being chiefly engaged in forming blossom-buds for the future crop.

It may be justly inferred, from what is here stated, that the bad success which most gardeners have experienced in the cultivation of this valuable fruit, arises principally from the luxuriant state of their trees; the limited space which they occupy on the wall is so disproportionate to their natural growth, that it is almost impossible, with deep and highly manured borders, to reclaim them from a habit of plethorical sterility. The farina, and the whole fructification, partake of this unhealthy condition; and it may be observed, that fruits fecundated with bad pollen scarcely ever resist the atmospheric changes which they afterwards encounter.

From observations made in vegetable physiology, I am persuaded that the tree is principally the produce of the earth, and the fruit of the atmosphere; a great diminution of vigor may take place in the one, without any perceptible alteration in the other. It is, therefore, the first object of the cultivator to proportion the supply of nutriment to the extent of his tree, and this will be best effected by the shallow border above described.

These are the remarks of a man long devoted to the difficulties of his profession, such as have been suggested by nature, and confirmed by experience; and if they are found to be sufficiently instructive for the pages of your useful miscellany, I shall feel happy in being numbered amongst your many correspondents.—Naturalist.

# ART. IV.—Plants Recently Figured and Described in Foreign Works.

PERISTERIA Cerina—(Waxen Dove flower.) A new species of the curious genus Peristeria, imported from the Spanish Main by Mr Knight of the King's-road, in whose nursery the accompanying figure was made in June last.

It is allied to the *P. pendula* of the Botanical Magazine, from which it differs in its spotless, smaller flowers, in the crisped border of the middle lobe of the labellum, and especially in the absence of wings from the column. This latter circumstance brings the genus *Peristeria* extremely near *Maxillaria Warreana* on the one hand, and *Maxillaria cristata* on the other.

The flowers have a strong smell of Juniper.—Botanical Register. Lophospermum scandens - (Climbing Lophosper.) Description of the species, Lophospermum scandens. This is an extremely handsome herbaceous climbing plant. Branches cylindrical, copiously clothed with soft viscid jointed hairs. Leaves alternate, numerous, petiolate, cordate, acuminate, inciso-serrated, rough, 5-nerved, from 3 to 4 inches long, and 2 to 3 broad. Petioles roundish, villose, 2 inches long. Flowers pendulous. Peduncles axillary, solitary, oneflowered, round, villose, without bracts, nearly twice as long as the petioles, turned together with the leaves to one side of the stem. Calyx rough, deeply 5-parted: the segments ovate, acuminate, entire, or here and there exhibiting a slight tooth, the two exterior broader than the others. Corolla large, showy, campanulate, pink inclining to purple, twice as long as the calyx, tubular at the base, dilated at the throat, limb 5-lobed, nearly equal, lobes broad, rounded at the top, with imbricated æstivation. Stamens 4, didynamous, fertile, inserted on the lower part of the tube, a little shorter than the corolla. Filaments linear, compressed, glandulose at the upper part. Anthers two-lobed, two-celled, not pointed, naked. Ovary globose, two-celled. Style very long, slender, filiform, smooth, thicker below. Stigma simple, emarginate. Capsule spherical crowned by the persistent base of the style, two-celled, nearly twovalved, splitting irregularly. Seeds numerous, imbricated, ascending, compressed, surrounded by a membranous or scarious, irregular margined border, truncate at the top, and having at the base a depressed hilum.

Popular and Geographical Notice. This truly magnificent plant, as professor Don justly terms it, was first made known to Europeans as a native of Mexico by Sesse and Mocinno, whose specimens are still preserved in the herbarium of Mr Lambert. The species here figured is the genuine scandens, as professor Don has been so obliging as to determine for us; that which commonly passes for such being the Lophospermum erubescens. Both are climbing plants, and desirable subjects for cultivation, possessing the great advantage of unfolding a succession of flowers for some months. This depends upon the progressive development of the main stem and branches throughout the summer and autumn months, whilst the flowers being axillary are also continually produced as the new leaves are formed. The same habit is seen in the Maurandia, a genus very closely allied to Lophospermum.

Introduction; where grown; Culture. Although this plant was made known by Professer Don, from dried specimens in the Lambertian herbarium, it is to William Bates, Esq., that we are indebted for the introduction of its living roots to this country. Mr Bates found it growing very generally over bushes, making a splendid appearance in the valley of Mexico. Here he observed other species also, and amongst them one with pure white flowers. Our present plant first flowered in the collection of Charles Tayleure, Esq., of Toxteth-park, who presented it to the Liverpool Botanic Garden From the rich collection of this most important establishment specimens were liberally handed to Mrs E. Bury, of Everton, to whose kindness and talent we are indebted for the present correct delineation.

Mr Shepherd, the Curator, informs us that its root is thick and fleshy, not unlike those of the Dahlia. He further states that he planted it last spring, (1836,) against a south wall, to which it was trained. Here it grew as luxuriantly as the Lophospermum erubescens. In the autumn the root was covered over with dry peat earth, to the depth of about eight inches; and on examining it in the present month of April, he found it perfectly sound, and beginning to grow.—Botanist.

Leptosiphon Androsaceus — (Androsace-like Leptosiphon.) The name of the genus now before us is derived from the Greek words Leptos, slender; and Siphon, a tube. Its application is evident.

This is a very pretty newly-introduced annual, of humble growth,

varying in the color of its flowers, from white to pale pink or purple. It is a valuable little plant for flowering early in the summer from autumn-sown seeds. The past winter has been severe, and most unfavorable to tender plants, notwithstanding which we have healthy seedlings of it, growing in an exposed situation, from seeds which had been shed from a flowering plant last autumn. This may be considered as ample proof of its power to withstand any vicissitudes of winter; but the heat of summer, in a dry soil, is not very congenial to its luxuriance, therefore a rather shady situation should be chosen for spring-sown plants, which are intended to flower in August.

The physiologist may be recommended to examine the leaves of this plant, which are deeply divided into segments, always consisting of an even number, as four, six, eight, &c.—Botanic Garden.

Platystigma Lineare — (Linear-leaved Platystigma.) One of the prettiest of all little annuals, with its graceful cups of white and yellow, resembling those of a ranunculus, but far more gay.

It is a native of California, where it was originally found by Douglas, who however sent home no seed. More recently it has been received at St. Petersburgh from the Russian settlements in California, and thence it has found its way to England. I fear, however, our damp summers will prevent its ripening seed with any certainty.—Botanical Register.

Gardenia Pannea—(Cloth-leaved Gardenia.) A handsome stove shrub, native of the tropical parts of South America, whence it was received some years since by the Horticultural Society.

It flowers in June and July; but like a large number of the woody inhabitants of the tropics, seldom produces its blossoms in this country. The drawing was made three or four years since. The dull wrinkled foliage is by no means handsome, and as the flowers are destitute of smell, they have nothing to recommend them beyond their size and curious color.—Botanical Register.

Echeveria Racemosa — (Racemed Echeveria.) Four species of this handsome genus are described by De Candolle, all natives of Mexico or California, and a fifth (Mexican one) is described by Haworth: from all these our plant differs in the inflorescence, and still more in the foliage. The Glasgow garden has received it from the Berlin garden, but without a name, and from that of Claremont under the appellation here adopted. Of its history, I regret to say

I know nothing: it is probably a native of Mexico. The flowers are produced copiously in the green house in the summer and autumn months.

Description.—Succulent, suffrutricose. Barren stems short, thickly clothed with rosulate tufts of fleshy leaves, of a brownish green color and glaucous hue, two to four inches long, in form between lanceolate and linguiform, slightly concave above, convex and keeled beneath, the margin white and cartilaginous: flowering stems nearly a foot high, rounded, glaucous, sparingly leafy, with leaves of the same shape as those of the barren stems, but narrower and gradually becoming smaller. Raceme elongated, many-flowered. Pedicels curved. Calyx 5-partite, fleshy, glaucous, the segments ovato-lanceolate, very sharp-pointed. Corolla red, of five, erect, carinated petals, gibbous at the base, and there united so as to appear monopetalous. Stamens ten, five at the base of the petals, and alternate with them, five shorter ones inserted a little above the middle of the petals. Hypogynous glands five, small, white, fleshy, one at the base of each germen. Pistils five, standing close, erect: Germen ovate, tapering into a rather short, slender style: Stigma obtuse.—Botanical Magazine.

Fuchsia Globosa, var. Elegans—(Elegant globe-flowered Fuchsia.) The species of which our present subject is a variety, has—since it was made known by Mr. Bunny, who raised it from seeds of the F. conica,—been a great favorite in our gardens; and certainly its pretty growth, the brilliant scarlet color, and globose figure of the flower, stamp it with much interest and beauty, which render it highly worthy of the place it enjoys.

Beautiful as are many of the varieties that have sprung from this and other species of the genus *Fuchsia*, there is not one, with which we profess an acquaintance, more handsome than that now figured: the flowers are large, of the most brilliant colors, and the general habit of the plant is bold and elegant.

It was raised by Mr. Silverlock, in his nursery at Chichester, where from a fine flowering plant the accompanying faithful representation was delineated by Miss Foley, and by Mr. S. kindly communicated to us. Although Mr. S. is certain of its being raised from seeds produced by F. globosa, yet he cannot positively say by what species the flowers became fertilized, as so many crosses were

made about the same time, but of its being a fixed variety there is no doubt.

It may be cultivated without much difficulty in any rich soil. No plants contribute more to the gaiety or elegance of our flower gardens than those belonging to the genus *Fuchsia*, and there is perhaps no better way of showing their rich pendent flowers to advantage than by grouping them, not over thick, in a bed of rich soil, in which they grow strong, and produce a great profusion of large blossoms. We have seen them present a very striking and interesting appearance when trained upon neat trellis work against a wall.

The generic name was given in honor of Leoner Fuchs, a German botanist, author of "Historia Stirpum."—Paxon's Mag. of Bot.

# ART. V.—Of the Analysis of Soils, and of the Agricultural Relations between Soils and Plants.

We have seen that the earths have a threefold capacity: that they receive and lodge the roots of plants and support their stems; that they absorb and hold air, water and mucilage—aliments necessary to vegetable life; and that they even yield a portion of themselves to these aliments. But we have also seen, that they are not equally adapted to these offices; that their parts, texture, and qualities are different; that they are cold or warm, wet or dry, porous or compact, barren or productive, in proportion as one or other may predominate in the soil: and that to fit them for discharging the various functions to which they are destined, each must contribute its share, and all be minutely divided and intimately mixed. In this great work nature has performed her part; but as is usual with her, she has wisely and benevolently left something for man to do.

This necessary march of human industry, obviously begins by ascertaining the nature of the soil. But neither the touch, nor the eye, however practised or acute can in all cases determine this. Clay when wet, is cold and tenacious—a description that belongs also to magnesian earths: sand and gravel are hard and granular; but so also are some of the modifications of lime; vegetable mould is black and friable, but not exclusively so: for schistous and carbonaceous earths have the same properties.

It is here, then, that chemistry offers herself to obviate difficulties, and remove doubts; but neither the apparatus nor the process of this science, are within the reach of all who are interested in the inquiry, and we accordingly subjoin a method, less comprehensive, but more simple, and sufficiently exact for agricultural purposes, and which calls only for two vases, a pair of scales, clean water, and a little sulphuric acid.

"1st. Take a small quantity of earth from different parts of the field, the soil of which you wish to ascertain, mix them well together, and weigh them; put them in an oven, heated for baking bread, and after they are dried, weigh them again; the difference will show the absorbent power of the earth. When the loss of weight in 400 grains, amounts to 50, this power is great, and indicates the presence of much animal or vegetable matter; but when it does not exceed 20, the absorbent power is small, and the vegetable matter deficient.\*

"2d. Put the dried mass into a vase with one fourth of its own weight of clear water; mix them well together; pour off the dirty water into a second vase, and pour on as much clean water as before; stir the contents, and continue this process until the water poured off is as clear as that poured on the earth. What remains in the first employed vase, is sand, silicious or calcareous.

"3d. The dirty water, collected in the second, will form a deposit, which (after pouring off the water,) must be dried, weighed, and calcined. On weighing it after this process, the quantity lost will show the portion of animal and vegetable mould contained in the soil; and,

"4th. This calcined matter must then be carefully pulverized and weighed, as also the first deposit of sand, but without mixing them. To these, apply (separately,) sulphuric acid, and what they respectively lose in weight, is the portion of calcareous or aluminous earths contained in them. These last may be separated from the mass by soap lye, which dissolves them." †

Here is the light we wanted. In knowing the disease, we find the cure. Clay and sand qualify each other; either of these will

<sup>\*</sup> See Davy's Elements.

<sup>†</sup> This method of analyzing soils is that described by M. Bosc, member of the Institute of France, &c., and recommended to French agriculturists.

correct an excess of lime; and magnesian earth, when saturated with carbonic acid, becomes fertile.

But entirely to alter the constitution of a soil, whether by mechanical or other means, is a work of time, labor, and expense, and little adapted to the pecuniary circumstances of farmers in general. Fortunately, a remedy, cheaper, more accessible and less difficult, is found in that great diversity of habits and character, which mark the vegetable races. We shall, therefore, in what remains of this section, indicate the principal of these, as furnishing the basis of all rational agriculture.

Ist. Plants have different systems of roots, stems, and leaves, and adapt themselves according to different kinds of soil. The Tussilago prefers clay; the Spergula, sand; Asparagus will not flourish on a bed of granite; nor Muscus Islandicus on one of alluvion. It is obvious that fibrous rooted plants, which occupy only the surface of the earth, can subsist on comparatively stiff and compact soils, in which those of the leguminous and cruciform families would perish, from inability to penetrate and divide.

2d. Plants of the same or of a similar kind, do not follow each other advantageously in the same soil. Every careful obsever must have seen how grasses alternate in meadows or pastures, where nature is left to herself. At one time timothy, at another clover, at a third red top, and at a fourth blue grass, prevails. The same remark applies to forest trees; the original growth of wood is rarely succeeded by a second of the same kind; pine is followed by oak, oak by chestnut, chestnut by hickory. A young apple tree will not live in the place where an old one has died; even the pear tree does not thrive in succession to an apple tree; but stone fruits will follow either with advantage. "In the Gautinois, (says Bosc,) saffron is not resumed but after a lapse of twenty years; and in the Netherlands, flax and colzat require an interval of six years. Peas, when they follow beans, give a lighter crop than when they succeed plants of another family." \*

3d. Vegetables, whether of the same family or not, having a similar structure of roots, should not succeed each other. It has been

<sup>\*</sup> The ill effect of a succession of crops of the same kind was not unknown to the Romans. We have proof of this in the following passage of Festus: Restibilis ager fit qui continuo biennio seritur farreo spico, id est aristato, quod, ne fiat solent, qui pradia locant, excipere.

observed that trees suffer considerably by the neighborhood of sainfoin and lucern, on account of the great depth to which the roots of these plants penetrate—whereas culmiferous grasses do them no harm.

4th. Annual or biennial trefoils prevent the escape of moisture from sandy and arid soils, and should constantly cover them in the absence of other plants; † while drying and dividing crops, as beans, cabbages, chicory, &c. &c., are best fitted to correct the faults of stiff and wet clays.

5th. When plants are cultivated in rows or hills, and the ground between them is thoroughly worked, the earth is kept open, divided, and permeable to air, heat, and water, and accordingly receives from the atmosphere nearly as much alimentary provision as it gives to the plant. This principle is the basis of the drill husbandry.

6th. All plants permitted to go through the phases of vegetation, (and of course to give their seeds,) exhaust the ground, in a greater or less degree; but if cut green, and before seeding, they take little from the principle of fertility.

7th. Plants are exhausters in proportion to the length of time they occupy the soil. Those of the culmiferous kinds (wheat, rye, &c.) do not ripen under ten months, and during this period, forbid the earth from being stirred; while, on the other hand, leguminous plants occupy it but six months, and permit frequent ploughings. This is one reason why culmiferous crops are greater exhausters than leguminous: another is, that the stems of culmiferous become hard and flinty, and their leaves dry and yellow, from the time of flowering till the ripening of the seed-losing their inhaling or absorbing faculties-circulating no juices, and living altogether in their roots, and on aliments exclusively derived from the earth; whereas leguminous or cruciferous plants, as cabbages, turnips, &c. &c., have succulent stems, and broad and porous leaves, and draw their principal nourishment from the atmosphere. The remains of culmiferous crops also are fewer, and less easily decomposed, than those of the leguminous family.

8th. Meadows, natural and artificial, yield the food necessary to cattle, and, in proportion as these are multiplied, manures are increased, and the soil made better. Another circumstance that re-

<sup>†</sup> The "Sterilis tellus media versatur in æstu," of Virgil, shows the opinion he entertained of a husbandry that left the fields without vegetation.

commends them is, that so long as they last, they exact but little labor, and leave the whole force of the farmer to be directed to his arable grounds.

9th. Grasses are either fibrous or tap-rooted, or both. The remarks already made, in articles 1, 2, and 3, apply also to them. Timothy, red top, oat grass, and rye grass, succeed best, in stiff, wet soils. Sainfoin does well on soils the most bare, mountainous, and arid; lucern and the trefoils, (or clovers,) only attain the perfection of which they are susceptible, in warm, dry, calcareous earth.

10th. The ameliorating quality of tap-rooted plants is supposed to be in proportion to their natural duration; annual clover, (lupinella,) has less of this property than biennial, (Dutch clover,) biennial less than sainfoin, and sainfoin less than lucern.

11th. Any green crop ploughed into the soil, has an effect highly improving, but for this purpose, lupins and buckwheat (cut when in flower) are most proper.

12th. Mixed crops (as indian corn, pumpkins, and peas, and oats) are much and profitably employed, and with less injury to the soil than either corn or oats alone.‡

# ART. V.—On the Natural Succession of Forest Trees in North America. By J. M., Philadelphia.

In Vol. III. p. 351, an extract is given from Evelyn's letter to Sir John Aubrey, stating that beech trees grew in place of oaks which had been cut down by his grandfather, and that birch succeeded beech which his brother had extirpated. In the United States the spontaneous succession of timber, of a different kind from that cut down, is well known. In the Memoirs of the Philadelphia Society for promoting Agriculture, Vol. I., there are several papers on this subject, by the president, the late Richard Peters; by Dr. Mease;

<sup>†</sup> The good effect of these mixtures was known to the ancients, from whom the practice has descended to us. What a picture of fertility and abundance have we in the 22 chap. 18th book of Pliny's Natural History: "Sub vite seritur frumentum, mox legumen, decinde olus, omnia, eodem anno, omniaque aliena um bra aluntur."

by Mr John Adlum, who had long been a surveyor in the new settlements in Pennsylvania; by Dr Caldwell, in reference to the fact in North Carolina, in Massachusetts, and in New Jersey; and a confirmation of it in the last mentioned state, by Mr Thomas F. Leaming. In the third volume, Mr Isaac Wayne, son of the American general the late A. Wayne, also gives some interesting details respecting the appearance of timber trees, of a kind different from those which formerly covered the ground in his vicinity, and which had been cut down by the American army, when encamped there in the autumn and winter of the year 1777, and spring of the following year. One of the above writers refers to the relation of Mr Hearne (Journey to the Northern Ocean, p. 452), for the fact of strawberries growing up wild near Churchill river, and in the interior parts of the country, particularly in such places as have been formerly set on fire; and for that of hips and raspberry bushes shooting up in great numbers, in burnt places, where nothing of the kind had ever been seen before. Cartwright is also quoted, in proof of the point. He observes, "that if through carelessness the old spruce woods are burnt, or by lightning, Indian tea first comes up, currants follow, and after them birch." (Journal of Trans. at Labrador, Vol. I. p. 225.) Nine years after the publication of this last work, M'Kenzie stated, that "land covered with spruce-pine, and white birch, when laid waste by fire, produced nothing but poplars:"\* and yet the Edinburgh reviewer of his work very indelicately declared his disbelief of the relation. Recently, we have additional testimony on this subject. In the manual on the culture of silk, prepared in consequence of a resolution of the house of representatives of the American Congress, and published in the session of 1828, it is stated (p. 38) that "in Tennessee, when a native forest is cut down, if the land be enclosed, a growth of red mulberry trees soon takes place." All these statements do not admit a doubt to be entertained of the natural succession of forest timber; the fact is moreover familiar to every man who has lived in the country, and to almost every intelligent person in North America. I regret that the enterprising voyager did not live to shame the northen critic for his rudeness, and to enjoy the satisfaction of seeing his own testimony of a curious and interesting fact in natural history confirmed by others. - Gardener's Magazine.

<sup>\*</sup> Voyage from Montreal to the Frozen and Pacific Oceans. London. 1801.

## ART. VI .- Winds and Storms. By W. G., Otisco, N. Y.

THE theory of the winds-their general direction and force-the barometrical fluctuations they produce—their effect on the temperature and their general influence on the climate—and the phenomena they present when moving as storms or tornadoes, render their investigation and correct understanding of more than usual interest to the farmer, as well as to the philosophical observer of nature. Meteorology has of late assumed a new aspect, from the researches that have so closely identified it in its various changes with the electro-magnetic agency, and many valuable facts connected with the origin, tendency and movements of the general currents of air have been observed and recorded. It is evident, that to make an approximation to certainty in this matter, a great number of observations, and those too made at the same time, but in different places, are required. The number of individuals who find a pleasure in making observations of this nature scattered over the world—the practice of seamen in placing on their log such meteorological changesand in the United States the regular observations made and recorded at [the various military posts in such widely different climates and latitudes, promise altogether the accumulation of a mass of facts from which correct inferences and deductions may be drawn.

Two theories to account for the phenomena that accompany the gales and tornadoes of the Atlantic, and the coasts and interior of the continent, and illustrate the general action of the currents of the atmosphere, have lately been brought before the public; the first called the rotary theory, by Mr W. C. Redfield, of New York; and the other known as the chimney, or centrifugal one, by Mr Espy, of Philadelphia.

The general theory supported by Mr R. with great ability and research is, that all great storms, those that occasion any considerable variation of the barometer, move with a rotary motion round a given centre, the progression of which centre constitutes the line on which the gale moves, and of course determines the rapidity with which the storm advances. The diameter of these rotary circles varies from a degree to five or six, or from sixty miles to four hundred; and the time taken up by the gale in passing over a given space determines its rapidity and the diameter of the whole. The

manner in which these gales move, and the phenomena they exhibit, may be illustrated by drawing a circle of two or three inches in diameter on paper, passing a line directly through its centre to show the line on which the storm moves, and making two lines parallel to the above, which shall intersect the outline of the circle drawn. It will be seen on looking at such a diagram, that during the passage of a storm with a rotary motion, the wind at the same moment, in different parts of the circle, will be blowing from every point of the compass, and of course with a velocity far exceeding the onward progress of the gale. For instance, we will suppose the course of the gale to be north: it will be seen that, since the storm in advancing invariably turns from east to west, or from right to left, the wind where it passes along the east parallel line will blow strongly but steadily from the south, while that part of the gale that intersects the west parallel line will blow with equal force and velocity from the north. A West India hurricane, that commences almost in a point in the tropical seas, and blowing with irresistible violence there, gradually expands in diameter, and diminishes in intensity, as it sweeps in a great circle over the West Indian Sea and Islands, until it approaches the southern coast of the United States, generally in the neighborhood of Cape Hatteras, whence it is inflected by the coast and ranges of mountains in the interior, till its fury is spent and its course lost off Newfoundland and the Grand Banks, That such is the general course pursued by the tropical hurricanes, is evident from the facts accumulated by Mr R., and from the beautiful chart with which he has in Silliman's Journal illustrated the theory, and traced the course of some ten or twelve of the most violent and best defined gales that have occurred within the last twenty years. Thus if the centre of one of these vast gyratory bodies of air is passing north, say up the valley of the Hudson, the east ern margin at Boston would be a regular southern gale, while in the country of the lakes, or the Genesee, the current of air would be from the north.

That the rotary theory is very satisfactory in its application to those tornadoes or hurricanes which visit the tropical regions, and sometimes appear in this country, must be admitted by all. Tornadoes, wherever they may originate, or whatever may be their course, whether on land or over seas, always seem to act with a rotary motion, and as whirlwinds, possessing a forward as well as gyratory movement, are well understood. The sudden lull, so characteristic

of the tropical hurricane—which must ensue if the rotary system is correct—and the almost instantaneous change which takes place in the direction of the wind, when after the lull it recommences with violence, are precisely what ought to be if the mass of the gale moves in a rapid whirl. When Mr R. first promulgated his theory, and exhibited the facts on which he relied for its support, he was by many understood to include all those general and regular currents of air which, without sensibly affecting the barometer, or only so to a very limited extent, sometimes prevail in one direction for a considerable period, as in our northeastern or southwestern winds, and this long continuance was deemed inconsistent with the rotary theory, and contradictory to the well known facts that must attend such movements. This misapprehension of Mr R.'s principles has been corrected by himself, and such new facts adduced as seem to place the rotary system of storms beyond the reach of doubt.

The theory of Mr Espy supposes, that in a hurricane the wind blows from all points of the compass to a given centre, the forward movement of which point indicates the progress and rapidity of the storm. It is founded on the well known fact, that in an open chimney or large fire, the cooler air rushes from every quarter to supply the vacancy left by the ascending heated air. This theory it is apprehended does not explain the phenomena connected with tornadoes and thunder storms as satisfactorily as does the rotary theory; and when it is remembered that all gales partake more or less of the whirlwind character-that the gyratory movement is generally proportioned in violence to the electrical state of the atmosphere, and that there is clearly in the centre of most tornadoes an upward tendency of the air, which rarely or never exists without a whirling movement, we think the probabilities are altogether in favor of the theory advocated by Mr R. As it is, the difference is hardly worth contending about by men of science, since, should Mr E. admit a rotary movement of the central point to which his currents of air all tend, a fact he can scarcely deny, it is clear there would be but little difference in the ultimate results.

The winds that have the most influence on the climate and general temperature of our country, are those that blow from the northeast, or the southwest; as the first almost invariably reduces the temperature to a great extent, and the last is in most instances the precursor of rains. These currents of air usually continue several

days with more or less violence, and of course are not to be considered as coming within either of the theories above noted. Our northeasters are proverbially obstinate and enduring; and those who have witnessed the twelve or twenty days of rain from that quarter, that usually afflicts this country in May or June, when the weathercocks fairly rust into the Nova Scotia sky—when umbrellas and waterproof overcoats are in great demand, and the farmer's corn rots in the ground and his lambs perish in the field, will need no other evidence of the fact.

That the general course of the winds on this continent is from the northwest, observations long continued in various parts of it fully prove; and every one who has paid attention to meteorology must have noticed, that while the lower strata of clouds have been running from the south or the north, the higher currents of air, and the light clouds floated by them, have still been from the western quarters; indeed, it has not unfrequently occurred that while the wind and weather has been fine at one point, at another, only a few hundred miles distant, the wind may be in a totally different direction, and a severe and long continued gale be at that very time raging. An illustration of this fact occurred on the 4th of March last. At Washington, (it was the day of the inauguration of the new President,) the weather was clear and beautiful—the wind from the west, and the air pure; while across the whole southern extremity of the Union, from Savannah to New Orleans, a cold northeast storm of wind and rain was passing, and what should be particularly remembered is, that it commenced raining at New Orleans at least six hours before it was felt at Savannah.

The great snow storm of October 5th, 1836, will be remembered by most of our readers, and will furnish a good illustration of the manner in which our northeast storms commonly operate. It extended from Quebec to the Gulf of Mexico, and was accompanied by snow nearly the whole distance. For thirtysix hours previous to the fall of snow, the wind had blown steadily and strongly from the north of east, with a current in the interior more deflected to the south, owing probably to the general range of the rivers and mountains. No snow in any part of the United States fell within from 30 to 40 miles of the sea coast; it being rain on the coast, and the line between the rain and snow passing through Concord, Worces-

ter, Middletown, the Highlands, and the first ranges of elevated land through Pennsylvania, Maryland and Virginia. At Macon and Milledgeville in Georgia, the wind was strong from the north, and the depression of temperature was sufficiently indicated by the hard frosts of the 4th, and the cold rains of the 5th and 6th. At Yorktown, in South Carolina, a few flakes of snow were mingled with the rain that commenced falling on the evening of the 4th. night the Blue Mountains of Virginia, and the Sideling Hills of Maryland, were whitened with several inches of snow. Snow also accompanied the rain that fell at Wheeling on the Ohio river, west of the Allegany ranges, on the afternoon of the 4th. On the 5th, snow fell over most of the northern states, evidently conforming to the rule laid down by Dr. Franklin, that northeast storms begin in the southwest, as it is clear from a comparison of dates, that the rain or snow retrogaded against the wind, or commenced later as they were felt at the north. Thus at Wheeling there was rain and snow in the afternoon, at Yorktown in the evening, in Maryland and Pennsylvania it snowed most of the night, in the interior of New York, near Utica or Onondaga, it did not commence till near morning, the tops of the Green Mountains near Williamstown and Pittsfield were covered early on the morning of the 5th, while, owing to the influence of Lake Ontario, it did not begin to snow at Lockport and Buffalo before about ten o'clock.

The authentic records of this severe and extensive gale, show that at least twelve hours were occupied by the storm in backing against the wind from South Carolina to the St. Lawrence, and its low temperature with its little effect on the barometer, proves that it belonged to a direct moving current of air, and not to either the rotary or centrifugal classes of storms. It is hardly possible that the frosts of Macon, or the snows of Carolina, could have originated from a current of air fresh from the tropical heats, and then first impinging on the American shores; and the probability is still less that it originated from such causes as is by Mr Espy deemed in such cases capable of producing them.

Observations made with some care have convinced us, that the long continued and wide sweeping storms that reach from the Atlantic to the Rocky Mountains, and from the extreme north to South America, whether the current of air sets from the north or the south matters not, so far as regards the principle, and which last from

three to five days, have a different origin, and proceed on different principles, from the hurricanes and tornadoes of the tropics and the Western Atlantic. From an elevation of country near the residence of the writer, a tract of country stretching from near Oswego to the Highlands of Fish Creek, and the sources of the Mohawk, is distinctly visible, embracing an extent of from 50 to 70 miles. Repeated attention to the circumstance has shown, that when a regular "set to" from the southwest has commenced, and been preceded by the usual stiff gale of twenty or thirty hours from the same quarter, it rarely fails of raining or snowing an hour or two on the country north of the Oneida before reaching us, and of course must advance against the wind. The result is directly the reverse when the gale is from the northeast, the rain or snow striking us long before it is felt in the region north of the lakes. To use a common and well understood phrase, the stream of clouds moving with the wind seems to "dam up," and constant accumulation of vapor being made, the current, like a river, is compelled to "set back," until by deposition of moisture, electrical agency, or other causes, equilibrium is restored.—Genesee Farmer.

# ART. VII .- Turnep Townsend.

There are some men in every country weak and wicked enough to sneer at every thing that does not minister to the immediate gratification of the senses, however much it may tend to ameliorate and improve the great mass of mankind, or benefit their condition. In European countries, this class of men are found among the witlings and parasites of courts, where, elated with temporary importance, they look with disdain upon men whose far-reaching but unobtrusive minds are engaged in benefiting their fellow men, instead of devoting themselves to the foolish fashions and luxurious tastes of the day. In this country, the same species of individuals, though perhaps more rarely, are to be found. They are most frequently discovered among the idle and junior classes of the professions—persons whose parents have obtained competence and wealth by labor, mechanical pursuits, manufactures, or trade, and who, having

forgotten the honorable business of their fathers, are disposed to look with contempt on the producing classes. Such a feeling however does not exist in the mind of any well informed man, who is accustomed to view the relation between cause and effect, and who understands the influence which the various parts of the great social superstructure exercise upon each other.

Such was the unworthy feeling that produced the nickname placed at the head of this article. "Turnep Townsend," so called by the court fops of the reign of George the First, was a nobleman of sterling qualities of heart and mind, and who of course was un\* willing to devote all his time to the ridiculous and paltry fooleries which engross the attention of so many. Lord 'Townsend accompanied the king in one of his visits to Germany, and while there was much struck with the fields devoted to the turnep culture in that country, a kind of farming at that time utterly unknown in England. As a food for cattle and sheep, as an enricher of the ground, and as a preparative for grain crops, Townsend saw these roots were unrivalled; and making himself familiar with the processes of culture, on his return introduced the practice among his tenants, both by instruction and example. Entering with spirit into the undertaking, he found his efforts crowned with complete success, and from that date may be traced the introduction and spread of the turnep culture in England.

So devoted was Townsend to his new occupation of agriculture, that whenever his duties would permit, he used to hasten away from court to his farms, to encourage by his presence and directions the improvements he was endeavoring to introduce. Such a man could not be understood by the unfledged wits and fashionable butterflies that shine and flit their short lives in the atmosphere of a court, and as turneps formed the base of his attempted innovations in farming, he acquired the name of "Turnep Townsend," which he retained during his life. "If it was asked," says Colquhoun, in his admirable statistical, commercial and agricultural [researches, " who was the man in modern times who had rendered England the most sig nal service, no one acquainted with facts could hesitate to say, tha it was the nobleman whom shallow courtiers nick-named in derision 'Turnep Townsend.' In half a century the turneps spread over the three kingdoms, and their yearly value, at this day, is not inferior to the interest of the national debt." The rapid renovation of Norfolk, where the turneps were first introduced, was astonishing, lands long considered as utterly worthless, were in a few years covered with heavy wheat, and the present annual value of the turnep in that country alone is estimated at not less than fifteen millions sterling, or more than sixty millions of dollars.—Genesee Farmer.

# ART. VIII .- Blight in Pear Trees.

Messes Editors,—In your last Register I observed an article copied from the "Farmers' Register," referring to the blight in pear trees. Any one that can discover a remedy for that trouble-some disease will deserve the thanks of the whole horticultural world, and the suggestions of any one are entitled to a fair trial. My experience, however, leads me to differ from the conclusions drawn by Mr Watkins, although I do not doubt the facts he has stated.

In the first place, he concludes, from the fact, that two trees standing in his yard, which had never been cultivated, not having been blighted, and that some young trees, having been set out in a cultivated spot were blighted, that cultivation by increasing the sap, causes the blight; and in the second place, that pruning trees has the same effect.

It appears, however, that the yard in which the trees stood was trodden by horses and cattle, and therefore, at least as much if not more manure, reached the roots, as would have done so, had the ground been ploughed or digged. It is too late in the day for any one to oppose cultivation with effect in this country, neither does Mr Watkins. (In the latter part of his communication he recommends that poor land should be made better even at the risk of blight;) but there are many, too many persons in this country who are satisfied with old fashions, and as long as they can raise as much as they want off of ten acres of land, will never try to get the same quantity from five, and feel perfectly satisfied with, and indeed, insist that better cider can be made from the sour natural fruit of the tree, than from the grafted and cultivated. With such men it is no use to argue; but they have children to come after them, and it is the rising generation who will be enlightened.

I insist, that not one half pruning enough is done in this country, and that thousands of trees are ruined by not being pruned properly when young. In many instances the limbs are left too near the ground, and when they have become so large as to be in the way, they are then cut off to the great detriment of the tree, the bark not growing over to heal the wound, and leaving a pretty sure chance of rot and decay; when, if trimmed the second year from the graft, and so on, year by year, until the tree is perfectly formed, a smooth thrifty stock shows itself, to reward the cultivator, instead of a rough, rotten and unthrifty snarl. I passed this last summer, what might have been a beautiful orchard, had proper pains been taken with it in its younger days. The trees apparently were about twenty years old, and the owner had let them go until this year without pruning, and now had cut off about a third of each tree, leaving the stumps of the branches sticking out from two to four inches, as a mark of his taste and sign of his ignorance. I, however, am not writing without some experience myself, which is diametrically opposite to that of Mr Watkins. I have about thirty pear trees in my garden which have been there from five to forty years, and I have no recollection of seeing a blight but in four. The whole have been served alike, manured, digged round and pruned to my heart's content, and a thriftier set of trees cannot be found in the country. The four trees which have blighted, were the Brown Beurre, the St Michael's, the Winter Thorn and one other, not known. All but the Winter Thorn are in the garden, that is in the yard; four years since part of the tree was grafted with the Seckle and Bartlet, which did well without blight, while the rest of the tree was blighted: this past season the whole top has been cut off and grafted with other fruit, and the grafts are doing well without blight, about sixty grafts have been put in. The tree dug round and manured, a considerable quantity of soap suds poured round it, and not a particle of blight yet to be seen. For years before the tree was not manured or digged round, and to make the case more singular, the ground had been trodden during a number of summers by a cow. This tree is over thirty years old. I have long since made up my mind that some kind of pears are more liable to blight than others, but I am afraid that the true cause of blight is not found out and will not be for years to come, if ever. Two of the other pears mentioned have been grafted, one of which has

never shown blight except in one limb, for the last four years, and that one limb was killed in one night this last spring, I think by lightning. The remaining pear tree is about seven years old, was purchased for a Heathcote, never bore until this year, does not prove to be the pear, has only two miserable cracked abortions on it and I do not know what it is, the stock, however, is a fine one and will be grafted next year.

I do not think Mr Watkins has proved any thing except the fact, that pear trees planted in a yard trodden by horses and calves may do well, and as it is not every one that has sufficient horses and calves to tread round all his trees, or if he had, would like to have them inmates of his garden, I trust no one will carry his experiment so far as to leave his grounds in an unseemly condition, or to cease pruning when young, so that he may form trees handsome as well as thrifty. Solomon's proverb, I think, will apply to trees as well as children, "Train up a tree in the way it should grow, and when it is old it will not depart from it."

NUMA.

# ART. IX. — Massachusetts Horticultural Society.

To give a detailed account of the proceedings and exhibitions of the Horticultural Society, for the month of August, we should not do justice to our distant patrons and friends, who, it may be supposed, cannot take great interest in such details, nor can it be very interesting to those in our own immediate vicinity.

It is gratifying to observe the interest that has been exhibited by the members of the society, and its friends. We have cause of gratitude for the rich variety of luxury and beauty with which our tables and stands have been crowned during the month of August.

It argues well for the progress of horticulture. Amid the prostration of almost every branch of industry, it is pleasant to witness the success which has attended the efforts of the gardener and husbandman. We are now assured of a plentiful harvest of the substantials of life, and an abundance of the numerous varieties of fruits which are congenial to our climate, with the exception of peaches: of this delicious fruit, we must for the present be deprived, or pay

an enormous price; for the greater part of our trees have been destroyed by the severity of our winters, and those alone are in bearing this year, which had the protection of glass.

Among the numerous flowers exhibited, the dahlia has been the most prominent. We have never seen finer specimens than some of those shown: the cold weather has been peculiarly favorable for their perfection. We shall defer giving descriptions of any until after the annual exhibition. We shall be able, then, we trust, to give the names of the greatest number of the finest dahlias ever exhibited in our country. We shall not be ashamed to show with any other society in the United States. The annual exhibition will take place on the 20th inst., in the new hall over 23 Tremont Street.

This hall has been rented by the Society for eighteen months, and will give ample accommodations for the annual as well as weekly exhibitions.

Friends of the Society, although not members, are requested to forward to the hall, on the 19th, fruits and flowers which they would like to have exhibited.

J. B.

#### ART, X .- Miscellaneous Articles.

To Destroy Insects. — There is nothing that protects young crops of turnips, cabbages, and other small plants, from the depredations of the fly, so well as rolling; for when the surface is rendered completely smooth, these insects are deprived of the harbor they would otherwise have under the clods and small lumps of earth. This method will be found more effectual than soaking the seed in any preparation, or dusting the plants with any composition whatever; but as the roller must only be used previous to, or at the time of sowing the seed, and not even then if the ground be wet, it is necessary that the gardener should have a hogshead always at hand in dry weather, containing infusions made of waste tobacco, lime, soot, cow dung, elder, burdock leaves, &c. A portion of these ingredients, or any other preparation that is pernicious or poisonous to insects, without injuring the plants, thrown into a hogshead kept filled up with water, if used moderately over beds of young plants

in dry weather, would, in almost every case, insure a successful crop.

As liquid, however, cannot be conveniently used on a large piece of land, it may be necessary, if insects are numerous, to sow tobacco dust mixed with road dust, soot, ashes, lime, or the dust of charcoal, in the proportion of half a bushel per acre, every morning until the plants are free or secure from their attacks. Turnip seed will sometimes sprout in fortyeight hours. Cabbage seed ought to come up within a week after it is sown; but it sometimes happens that the whole is destroyed before a plant is seen above ground; the seedsman, in this case, is often blamed without a cause. A correspondent has communicated the result of an experiment for preventing the attacks of flies or fleas, on turnips. He says, "steep your seeds in a pint of warm water for two hours, in which is infused one ounce of saltpetre; then dry the seed, and add currier's oil sufficient to wet the whole; after which mix it with plaster of Paris, so as to separate and render it fit for sowing."

In the summer season, brocoli, cabbage, cauliflower, &c., are particularly subject to the ravages of grubs and caterpillars; to prevent this wholly, is perhaps impossible, but it is not difficult to check these troublesome visitors; this may be done, by searching for them on their first appearance, and destroying them. Early in the morning, grubs may be collected from the earth, within two or three inches of such plants as they may have attacked the night previous. The approach of caterpillars is discoverable on the leaves of cabbages, many of which are reduced to a thin white skin, by the minute insects which emerge from the eggs placed on them; these leaves being gathered and thrown into the fire, a whole host of enemies may be destroyed at once; whereas, if they are suffered to remain, they will increase so rapidly, that in a few days the plantation, however extensive, may become infested; now, when once these arrive at the butterfly or moth stage of existence, they become capable of perpetuating their destructive race to an almost unlimited extent. The same remarks apply to all other insects in a torpid state. Worms, maggots, snails or slugs, may be driven away by sowing salt or lime in the spring, in the proportion of two or three bushels per acre, or by watering the soil occasionally with salt and water to the quantity of about two pounds of salt to four gallons of water; or the slug kind may be easily entrapped on small

beds of plants, by strewing slices of turnip on them late in the evening; the snails or slugs will readily crowd on them, and may be gathered up early in the morning (before sunrise) and destroyed.—

Bridgman's Gardener's Assistant.

ROOT CULTURE.—The root, and particularly the turnip culture, which has been extolled as the basis of improved husbandry in Great Britain, is rapidly extending among us: and we confidently anticipate from it the best practical results. Five years ago there was not probably two hundred pounds of ruta baga seed sown in the state; this year tons of this seed have been sown; and the culture of mangold wurtzel and carrots, has been also greatly extended. One seedsman has imported twentysix hundred weight of ruta baga seed, and this probably is not more than a quarter, or a third that has been sown. The supply has become exhausted, from Baltimore to Boston, and yet the demand has not been supplied. Our neighbor, Thorburn has sold this season 1,500 pounds ruta baga seed; 150 pounds carrot do.; 100 pounds parsnip do.; and 150 pounds mangold wurtzel do.; and, as indicating the extended culture of roots, and the advance of agricultural improvement, we add, that he has retailed seventy cultivators; eighty drill-barrows; and seventyfive of Green's straw-cutters. We record these facts as affording, in our mind, substantial proofs of a propitious change, and of the efforts to improve, which are now being manifested in our agricultural community. And from the spirit of inquiry which is abroad, and the general circulation of agricultural periodicals, we hazard little in saying, that the rising generation will be better farmers, and more enlightened men, than their fathers have been. every young farmer ponder upon these facts, and to stimulate him to honorable exertion, let him remember, that he who aims to excel, will at least attain mediocrity; while he who aims at mediocrity will generally fall short of it. Cultivate the mind, as the sure means of increasing the profits of the hands .- Albany Cult.

Mangel Wurzel.—Manzel Wurzel is a kind of red beet, not liable to be injured by disease or insects, and proof against the change of seasons. It requires loamy loose soil, and abundance of short and rich manure. It gives no unpleasant taste to milk or butter, (an objection which may be urged against turnips and most

kinds of cabbage)—quite the reverse. Pigs, as well as milch cows, are fond both of its leaves and roots. Sixteen or twenty perches under it, will support a cow, allowing her sixty pounds weight per day, for the five winter months; and half a pound of seed, which will cost about 1s. 6d., will sow these twenty perches. From the 20th to the end of April, is the best time for sowing the seed; and those of you who are not likely to have your ground at that time ready, should sow in a seedling bed, in order to transplant when the ground is prepared; and in this case you should not put out the plants until they are about an inch in diameter, else they will not arrive at full size. The best way, however, is to sow the seed where it is to remain, and the process is as follows:—

Prepare your land as if for drilling potatoes—open the drills eighteen inches or two feet distant, the deeper the better, unless there is yellow clay at the bottom-fill them with short manurecover them with four or five inches of earth-roll them lengthways, and then on the smooth and level top make holes with a dibbling stick, two inches in depth and about twelve inches apart, and into every hole drop two seeds, which are to be covered as the work proceeds. When the plants are about two inches high, you are to draw out from each hole the extra plant or plants, leaving, of course, the strongest and healthiest plant behind. Keep them clear from weeds, but do not earth them. If any of the plants appear to run to seed, pull them out, and transplant into their room, after stirring up the earth, and applying a little fresh manure, (and to the want of attention to this point the comparative failure of transplanted crops is to be attributed) other plants of mangel wurzel, rape, cabbages, or Swedish turnips, which should always be in a reserved seedling bed, in case of failure in any crop. In September pull the leaves-[cutting them close to the crown will cause the root to rot if left in the field during the winter]-and give them to your cows, sheep, and pigs. You will also find that they make a good substitute for greens or spinach.—Martin Doyle.

At Hohenheim, an experiment has been made, the last summer, to ascertain, comparatively, the best plan to be pursued with the cultivation of mangel wurzel—whether it was more profitable to pluck off the leaves, about a month previous to the clearing the roots from the ground, or allowing them to retain their leafy honors, until the period of their being taken up; and the following is the result

of the two equal portions of a field, on which the systems were tried:—On the 11th Oct., by leaves, 756 lbs.; 5th Nov., do., at the time of securing the roots, 272; ditto, weight of roots, 4,272—total, 5,500 lbs. The other portion of the field yielded, at the time of securing the roots—5th Nov., by leaves, 894 lbs.; ditto, weight of roots, 4,948—total, 5,842 lbs. On that moiety of the field where the roots had been untouched, there was a diminution in the produce of leaves, of 134 lbs., but an increase of 476 lbs. in the roots; and, even supposing that the leaves have equally nutritious properties with that of the roots, yet, there is a superiority in favor of the system of permitting the root to come to maturity, before depriving it of leaves, of 342 lbs., or about six per cent.—Mark Lane Express.

MILDEW OF GRAPES—A gentleman of this village, who takes much interest in these things, informs us that he has discovered a sure remedy for mildew upon grapes. The mildew has been the great bane to the success of growing the more tender but delicious kinds of grapes in this quarter, and even the much praised Isabella suffers more or less by it. The gentleman above mentioned, says that he last year discovered that his grapes began to mildew badly, that he had formerly tried sulphur and other remedies without success, and that he made the experiment of applying strong soap suds with a syringe to a few bunches, and these came to maturity plump, smooth and fair, while all the rest upon the same vine were so badly mildewed as to be unfit for use. Should this simple remedy prove effectual, our courage will again be revived in cultivating this delicious table fruit. — Fredonia Censor.

SALUBRIOUS QUALITIES OF THE STRAWBERRY.—Every friend to the fair will be glad to diffuse the knowledge of a pleasant dentifirce, and infallible sweetner of the breath. The common strawberry in a ripe state, when rubbed upon the teeth and gums, has these most agreeable influences, and becomes more efficacious if eaten freely. The celebrated Linnæus cured himself of gout by persevering in a regimen of strawberries.

HORTICULTURAL EXHIBITION AT GHENT. — At the recent show there were 6000 plants exhibited from different parts of Europe — valued at \$200,000. M. Rose-en-dael (a flowery name) gave \$2500 for a camelia! There were 322 guests at the sumptuous banquet.

#### QUINCY MARKET.

[Reported for the Horticultural Register.]

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APPLES,	peck	25	50
APRICOTS,	- doz.	50	
BEETS,	bunch	6	
BEANS, String,	peck	20	
Shell,	quart	10	12
CABBAGES,	dozen	37	50
CAULIFLOWERS,	a piece	12	25
CARROTS,	bunch	6	
CELERY,	root	6	
CUCUMBERS,	dozen	6	
(Pickles)	hundred	1 12	17
CURRANTS,	quart	6	8
CORN, (Green)	dozen	12	
GRAPES,	pound	75	1 00
LEMONS,	box	3 00	
LIMES, (pickled)	gallon	37	
MELONS, (Musk)	each	12	25
(Water)	do.	25	75
NUTS, Almonds, (Soft shelled)	pound	7	8
(Hard)	do.	4	5
Filberts	do.	3	4
English Walnuts	do.	5	7
Castana,	do.	4	5
Pea Nuts,	bushel	1 25	
ORANGES,	box	3 00	
ONIONS,	bushel	1 25	1 50
POTATOES,	do.	40	50
PEAS,	peck	20	25
PEARS,	do.	25	50
PEPPERS,	pound	3	
PLUMS,	quart	17	25
PEACHES,	dozen	25	75
SWEET POTATOES,	peck	75	
SQUASHES, Summer	dozen	12	
Winter	pound	4	
TURNIPS,	bushel	75	1 00
TOMATOES,	dozen	12	

Vegetables continue cheap and plenty. Potatoes have been sold by the quantity for thirtyseven and a half or less per bushel. Sweet Potatoes have been in market about a week. Apples, Pears, and Plums of numerous sorts in great abundance. A few Peaches are to be found of an inferior quality from open ground; a few fine ones are occasionally in market from the green houses at extravagant prices from 1 dollar to 3 dollars per dozen. Whortleberries have been unusually poor and price high.

Boston, August 29, 1837.

# HORTICULTURAL REGISTER.

AND

#### GARDENER'S MAGAZINE.

OCTOBER 1, 1837.

ART. I.—Rural Scenery. By Edward Sayers, hitherto known as "Junius."

#### THE FARM HOUSE GARDEN.

I was ever of opinion that the "Farm House Garden" forms one of the prettiest features in "Rural Economy," for it is so connectedly linked with Agriculture, that it not only gives a supply of useful fruits and esculent vegetables; but, it also serves as an additional finish to the well cultivated farm, and adds a mellowness to the surrounding neighborhood of the most agreeable nature to the near dweller and conveys to the traveller a prepossessing opinion of the good taste and moral rectitude of the Proprietor. I am well aware that there are many objections held out by the agriculturist in occupying too much time in gardening, under the impression that every moment should be given to the farm; however, I think upon a due consideration, that Horticulture has more of a tendency to improve Agriculture than in any way to retard it; and indeed so connectedly is the one linked with the other that in many cases they may be both classed under the same head.

It is not my province in this place to point out the true distinction of Horticulture and Agriculture; but, I shall endeavor to point out the *utility* of a good garden as relates to its connection to the well managed farm. There is one thing particular in which it may be made useful, namely, the growing any particular kind of seed for the farm or the better improvement of any variety, which requires to be traced to its true habit and quality, as peas, beans, corn and the like; a subject on which much might be said to the ag-

riculturist's interest:—for it is well known that every kind of grain and vegetable degenerates much in time, if not attended to, from its good qualities therefore the subject requires no comment.

In describing a garden many pleasing appendages may be introduced as useful and interesting but as no particular plan has come under my immediate attention I shall describe the one that occupied the hours of my juvenile days, and brings to mind the happy condition of the Farmer's boy.

The garden spoken of was closely attached to the farm-house and consisted of about a half an acre of ground of square form; divided by a centre walk from the south to the north end of the garden. On each side of the walk was a border four feet wide, planted with choice fruit trees in pairs, as the green-gage plum, Orleans plum, choice pears and the best kinds of gooseberries and currants; at the north end of the walk a rustic arbor was constructed overgrown with honeysuckles, clematis, and the different kinds of running vines; which answered as a shady retreat for the younger members of the family in the day, and a retired spot for the warbling notes of the nightingale at night. The southwest part of the garden was appropriated to a small flower garden neatly laid out which occupied the leisure hours of the female part of the family in an exercise that was at once pleasing to the mind and healthy to the constitution. The garden was well stocked with the best kinds of hardy shrubs and herbaceous plants and the annual list as balsamines. Combs and the more tender varieties were annually made up by a gardener from a neighboring gentleman's place, who always received the hearty welcome of the family when he contributed his choice treasures of "Flora's riches;" and whilst the kind mother was detaining him in the endless questions on the cultivation of flowers, the father was impatiently soliciting his company and conversation on the growth of choice vegetables and fruits, and finally he was shown every nook and corner of the farm, and freely solicited to give his opinion on all its products, and after passing the best part of the day, the gardener and farmer parted in the best of feeling, each pleased with the intelligence received from a mutual converse, on a subject so connectedly belonging to the comforts and welfare of all classes and denominations of people.

Upon a due consideration of the subject of farm-house gardens I

think the intelligent reader will agree; that, they are indispensably necessary to the farmer, as relates to the growing many choice kinds of seed, that could not be so conveniently attended to and would occupy much unnecessary land on the farm. There is also a moral tendency arising from the culture of flowers that ever keeps the mind free from that cold morose feeling that sometimes steals on the intellect which such charming harbingers of nature's gifts dispels from the senses of any intelligent person, and let the farmer for a moment reflect on the propriety of every branch of his family being conversedly and practically acquainted with not only the culture, and utility, of the vegetable product; but the beautiful economy of nature relative to the organization of flowers and the whole dependence of the animal kingdom on the vegetatable; which is to keep in a perpetual existence by flowers, being the conductors of one generation to another of the same species and he will not for a moment dispute the utility of the farm-house garden.

# ART II .- Fruit and Fruit Trees. (Concluded.)

#### ROOT GRAFTING.

This is done by whip grafting upon young seedling trees of the size of a quarter to an eighth of an inch, taken up, whip grafted at the root, and re-planted, and is practised in nurseries for want of better stocks. It may also be done upon pieces of roots to about three fourths of an inch in diameter and less, either by letting the roots remain or separating, and after grafting, replanting them. No composition is required; the yarn by which the graft roots are tied together will rot off and make room for growth.—Larger roots may be cleft grafted, and then the composition is to be used.

#### CROWN GRAFTING,

May be practised upon such stocks as have become too large and stubborn to cleave, and then two, four or more grafts inserted round the crown of the stock in a circular order, introduced between the bark and wood; this cannot be done until the bark peels freely—

the grafts are subject to be blown off. The stock will be a long time in healing over, and is subject to decay.

#### SIDE GRAFTING.

This is done by inserting the grafts into the sides of the branches without heading them down. To fill up any vacancy on trees thus, prepare the scion as for whip grafting, by sloping and tongueing it; then cut a chip from the place where the graft is to be inserted, of the same size with the slope on the graft in such manner that the wood on the slope of the graft will cover and fit the wood laid bare by taking out the chip; cut a notch or tongue on the stock to fit that on the graft, and match them firmly together: cover the parts matched with composition when necessary, first binding them together as in whip grafting. Nothing further is necessary, except pruning, as directed in cleft grafting.

#### BUDDING OR INOCULATION.

Budding should be performed on stocks of thrifty, vigorous growth. Trees may be raised by budding young trees about half an inch in diameter, near the ground. Buds inserted in this manner, will grow five and six feet and upwards in one season, and will form straight and smooth stems and finest trees. Budding may also be performed in the branches of young trees in the top, and leading, and side shoots; but if in the season of grafting, and you have plenty of scions, the latter is preferable. Roses, Lilacs, &c. &c. may be budded at any time after they are full grown, and as many kinds as there are of either, may be put on the same stock together, and form a pleasing variety.

#### TIME AND SEASON FOR BUDDING.

The seasons proper for budding are two. 1st, the spring, beginning after the sap flows and the bark peels freely, until the fore part of June, with buds cut from scions preserved as for grafting, and before used buried or immersed in water, or fresh from the tree: or 2d, (and which is the proper season) in the summer and fall, with fair, full grown buds, of the same season, taken from well ripened shoots, fresh from the tree, or kept with care only for a short time: otherwise it will be labor lost. In the summer or fall it should not be done so early as to cause the bud to shoot the same season; the

short time they will have to grow before cold weather, will not admit of their becoming ripened and prepared to withstand the winter frosts. On the other hand, it should not be put off too late, but be performed while the sap flows and the bark peels freely, and before the trees or shoots become bark bound, which time varies in the different kinds of trees, and is a little sooner or later according to the season, whether it be wet or dry, but generally as follows: The cherry, plum, and pear tree become bark bound, by the first of August, and should, together with the apricot, if worked on plum stocks, be inoculated the second or third week in July. The apple trees become bark-bound about the first of September, and should be budded in August. The peach, apricot and nectarine about the 20th of September, and should be budded between the first and middle of that month. It may, however, be done later, and if occasion require, after the bark begins to fasten, by rubbing it with a smooth knife handle or other substance, and thereby loosening it, but this is not safe. The shoots intended to be taken, are to be selected in the same manner as for grafting, and should be as fresh from the tree as circumstances will admit, and kept in the shade and moist, not saturated, and the work performed in cloudy weather. in the shade, or in the morning or evening.

#### MANNER OF BUDDING AND HEADING THE STOCKS.

This may be done by making incisions in the stock like a cross † or a T, then raising the corners and inserting the bud; but the following is the most simple, easy, and successful method; Having provided suitable shoots from which to take the buds, cut off the leaves a little above the buds; furnish yourself with some soft woollen yarn and a sharp penknife; fix upon a smooth part of the side of the stock; make a horizontal cut across the bark to the wood; then from this cut make two slits downwards, parallel to and apart from each other, the width of the bud with its bark when severed from the shoot; then with the point of your knife raise the bark next the horizontal cut between the slits, and peel it down their whole length, clear from the wood: make a slit in the bark peeled down. Next prepare the bud; place your knife about half an inch above the bud, and cut down through the bark into the surface of the wood, and so along under the bud, and out about half an inch below it, taking out as little of the wood as may be; then turn

down the loosened bark, insert the bud over the wood so as to cover it; then close the bark over it, leaving the bud to project up through the middle slit; break off about twenty inches of the yarn and place the middle over the bark, and just below the bud, binding it round the stock to the back side of it, then cross it and wind the thread around the stock over the bark, above and below the bud, not over it, until it is all closed up, not so tight as to prevent the sap from communicating; then tie a knot and the work is completed.

If it be spring, and the buds taken from scions preserved as for grafting, insert the bud with the wood; in summer or fall the wood may be separated from the bud. But if on separating the wood there appears a small hole on the under side, opposite the bud, the bud will not sprout and is rendered useless. It is therefore generally best to insert the bud with a little wood. It is considered preferable to insert the buds on single stems and upright branches on the north or shady side of the stocks, and on lateral branches; insert them on the upper side to shed water and make a perfect growth.-In about three weeks the bandage must be taken off by cutting across the varn, on the side of the stock opposite the bud. When the buds begin to shoot, the stock must be headed down, in spring budding, at or shortly after the time the bandages are taken off, for autumn budding, not until the next spring. This is performed by cutting off the stock about four inches above the bud, sloping upwards from the side opposite the bud. After the bud has grown five or six inches, tie a string around the stock a little above the shoot, and bring the ends to the outside and there tie them together, so as to keep the shoot in a perpendicular position, and brace it against the wind, which may otherwise blow it off. The shoots which put out from the stock should be cut or rubbed off occasionally.

After one season's growth of the bud, the stump left above the bud should be cut down close to the shoot and sloping from it, and a little composition put over it.

#### SEED.

Select proper seed from healthy trees, sound, ripe and fair fruit. Let the seed be put into sand as they are collected, and put into a cellar, or other cool, damp place, until the proper time to plant them. If the seeds are kept in a warm and dry place, they seldom

vegetate after it, and when they do, are generally of a sickly growth, and seldom make large and vigorous trees.

#### THE SEED BED.

The seed bed should be planted in the fall, before the ground is froze, or as early in the spring as the ground is in a state to be ploughed or spaded. Having selected your seed, prepare the ground to receive it; this should be of good soil, not subject to standing water.

Let it be spaded some time previous to planting. Plant the seed in rows, fifteen to eighteen inches apart, from one to two inches deep, according to the size of the seed and lightness of the soil. Apples, pears, and the like, eight or ten, and stone fruit three or four in a foot, in the rows. Cover them up, and press the ground moderately over them.

Stone fruit should be cracked a little if planted in the spring, which need not be done if planted in the fall. During the ensuing season, and every succeeding season, until the trees are removed, hoe out the weeds, loosen the ground, and thin out the seedling plants, (leaving only the most vigorous,) to from eight to ten inches apart. Water them occasionally in a drought.

#### THE NURSERY.

After one season's growth, either early in October, or immediately after the frost is out in the spring, trees that have grown about a quarter of an inch or more in diameter and formed perfect roots may be taken up and placed in nursery rows. Apple and other trees of slow growth which have not attained that size, nor perfected their roots, should remain another season. The nursery into which the young trees are now to be transplanted, should be in good soil, open to the sun and air. After being ploughed or spaded, and levelled by raking or harrowing, dig trenches lengthwise, from two and a half to three feet apart; then take up the trees from the bed. prune the roots and top with care, thinning out the branches and roots, cutting off the perpendicular or tap roots, and all irregular roots and branches, leaving only such roots as are in or near a horizontal position. Every tree that does not contain a sufficient number of well placed roots should be thrown away. Open trenches six or eight inches deep, and wide enough to admit the roots freely. Dip the roots in water, which will make the earth adhere to them, and place the trees in the trenches from a foot to eighteen inches apart; draw the ground upon the roots, raise the tree a little so that the ends of the roots incline a little downwards; then gradually fill up the trench, at the same time pressing and packing the ground moderately around the roots. In dry weather, water the trees twice or three times a week with rain water, or water warmed in the sun, about a pint to each tree, until they have thoroughly taken root. Plough between the rows and prune them every spring, keeping them clear of weeds during the season. Trees planted from the seed bed which have not been root grafted, will be fit to bud in the budding season of the summer and fall following, or to be whip grafted in the following spring. Those who prefer root grafting are referred to the article on root grafting.

Peach trees and the like, will be fit for transplanting in two or three years, and apples, plums, &c., in from three to five years. They will then have attained about six feet in height and a proportional thickness, and will make large, healthy, fruitful, and durable trees.

#### LAYERS AND CUTTINGS.

Many kinds of shrubs and vines may be propagated by cuttings or slips, and most, if not all sorts, may be propagated by layers, and in either case the work is to be done early in the fall, shortly after the leaves are shed, or in the spring, as soon as the ground will admit of it.

#### CUTTINGS.

Cuttings should be taken from the shoots of the preceding year's growth, from bearing stocks, of sound and perfect growth, close jointed, and neither rank and pithy, nor small and imperfect, and planted six or eight inches deep. Slips from shrubs, such as gooseberries and currants, may be from twelve to eighteen inches long; and for the grape, woodbine, and other vines, from sixteen to twenty inches long. Plant shrub cuttings in an upright or perpendicular position. On the other hand, the grape and other vines must be planted sloping, and nearly horizontal, with the ends turned up in such a manner as to raise two or three buds on the cutting above the surface of the ground where planted. Before planting, the ground should be loosened for some distance round, and the weeds kept down afterwards. Cuttings may be placed in a nursery a foot

apart every way, and transplanted after one or two season's growth, or planted at first where they are to remain. Grape cuttings should be taken when pruning vines in the fall, buried during winter, and planted in the spring.

#### LAYERS.

All sorts of shrubs and vines which admit of being propagated by cuttings, will succeed equally as well and some better, by layers, and many kinds may be propagated by layers which cannot by cuttings. Layers may be prepared in various ways. My object is to point out only the most plain and simple method, best adapted to common use, and for all ordinary purposes. Take for layers such young suckers or shoots as can be bent down to the ground without separation from the shoot or main stock; dig up and mix the earth along side the shrub or tree from which the layer is to be selected; make a hole from four to six inches deep; prepare a peg or stick from six to eight inches long, sharp at one end, and a hook at the other; cut out from the shoot intended for a layer the buds as directed for cuttings, when it is intended to raise a single stem, bring down the shoot and fasten it with the peg in the hole about twelve or fifteen inches from the end, then cover it over; raise the end of the layer so as to stand perpendicular from the ground, and press the earth around it. In one year the layer will have formed a root of its own, and may be separated from the main stock, the roots and branches pruned, and then planted permanently.

#### GOOSEBERRIES AND CURRANTS.

Currants and gooseberries, and particularly the first, are usually suffered to grow in bunches composed of side shoots and suckers which absorb all the moisture and substance of the earth, so that no herb or vegetable will thrive within a space of five or six feet from them; they increase until they choke each other, and become a heap of rubbish; the fruit is small, insipid, and unhealthy. They can, with a little attention be raised with a single stem, the fruit then grows more abundant, larger, and better flavored, which is effected by merely cutting out every bud with a chip of the wood from all that part of the cutting which, when planted, will be at or below the surface of the ground.

#### PLANTING AN ORCHARD.

In planting trees in an orchard or garden, where they are to remain, the same rules should be observed as in transplanting them from the seed bed to the nursery, in pruning, planting, watering and previously mellowing the soil; they should be planted early in October, or as soon as possible in the spring, and the earth, unless it is ploughed, should be spaded four or five feet in diameter for a tree. They should be well secured with firm stakes, and tied up with wisps or straw or loose bandages of any kind, to secure them from being shook or loosened in the ground. The trees should be planted a sufficient distance apart so as to admit the sun and a free circulation of air when full grown: apple and pear trees at least 40 feet, cherry and plum 30 feet, peach, apricot and nectarine 25 feet. Tilling by raising a succession of crops of grain and suitable manuring, particularly around the trees and as far as the roots extend, will promote a vigorous and rapid growth; in a few years they will attain considerable size and bear fruit in proportion.

#### SOIL AND SITUATION.

Low, wet or marshy ground is not suitable; it should be upland, or so much so as not to be exposed to standing water; should be open to sun and air, and tolerably rich.

That soil and situation which will bear good crops of winter grain, are well calculated for the cultivation of fruit trees, shrubs or vines. Occasional ploughing, digging, or in other way mixing or mellowing the ground, keeping down underbrush and weeds, and manuring are beneficial, and will at all times add to the health, vigor and fruitfulness of vines.

#### TRAINING AND PRUNING.

Trees, when young, both forest and fruit, may be trained to any shape, from that of a lofty towering top, by pruning away the large limbs, except the leading, upright one, to that of a low, spreading top, by cutting off the leading, upright limbs. Pear and cherry trees do well with a high top; other kinds make the best bearers with round tops; and no tree, except it be intended as a wall or espalier, should be suffered to form a top less than five or six feet from the ground; to this end, all limbs and branches, should, to that height, be gradually cut away.

Pruning should not be neglected, in divesting trees of suckers from the root, or side shoots, when they are not necessary to fill a vacancy; and generally, in promoting a free circulation of air, and in preventing limbs and branches or vines from intersecting or crowding each other, a medium should be observed, as pruning too much is injurious. The superabundance of sap will cause side shoots, suckers, and eventually decay. The limb or branch intended to be removed should be cut away clear and smooth, without leaving stumps or snags, and even with the trunk or main limb from which they are taken. Large wounds, or those of a moderate size, exposed to wet, should be covered over with tar, paint or composition. If this is neglected, or stumps or snags of the branches cut away are suffered to remain, the stump or exposed part will rot in the tree, render it hollow, and in a few years destroy it. Many orchards have rotted, and are now rotting down, from this cause.

#### DISEASES.

To prevent or cure diseases in vegetation, as well as animal life, the best antidotes and principal remedies are to remove the causes which produce them. To this end destroy caterpillars, all noxious worms and insects, prune off all unsound and affected parts. If this cannot be done without destroying it usefulness, cut it down and replace it with a young, healthy, vigorous tree. Swine rooting under trees, and birds frequenting the tops, building nests unmolested, will, in a great measure, if not wholly, destroy insects and vermin.

When a tree is bark bound, covered with rough bark and moss, these must be scraped off; and being washed with soap suds, or covered with a coat of lime wash, will be beneficial; prune the tree, removing side shoots and suckers from the root, and stir and manure the ground, for the most part, at least as far as the principal roots extend. The soil being sod bound, or barren, or covered with underbrush, or all together are the causes of the difficulty; these being remedied, the tree will again thrive.

It is a mistaken opinion, that the disease which destroys peach trees, &c., caused by grubs, can neither be prevented nor cured; either of which can be effected, if properly and thoroughly attended to. It is caused by an insect, in picking the bark of the tree near the root, and depositing the seed which produces the grub, be-

tween the first of July and frosts in the fall. To prevent this, about a foot of the trunk of the tree next the root should be brushed over with a coat of some sticky, nauseous, or impenetrable substance, and this repeated as often as the substance wastes away, is washed off by rains, or crumbles away, during the time specified above, which may be tar, train oil, or whitewash, and a little ashes or lime kept on the ground around against the tree. When trees are affected, either in the fall or spring, dig and remove the earth around the trunk, expose and give free access to every part affected; remove the gum, search thoroughly for the holes in the bark by which the grubs entered, prick into the bark with a sharp pointed knife: more effectually to find and trace the grubs and their holes, cut away the bark over the holes so as to lay them bare their whole extent, length and breadth, smooth the edges of the bark, scrape off all the gum and filth, which remove, together with all the grubs found, wash the holes and parts cut and scraped with lye or soap suds, or rub a little dry ashes over them, and close up the space dug with fresh soil ;examine the trees occasionally, and more particularly every spring and fall: repeat the operation to a greater or less extent, when necessary. By this means the grub will be subdued and exterminated, and the trees flourish.—Poughkeepsie Journal.

# ART. III.—Acclimating Nursery of Tropical plants.

WE publish with great pleasure, the article subjoined, from the Southern Agriculturist. The subject to which it relates is one of deep interest to the country, and for one we should be happy to see the views of the enterprising and intelligent projector, met in a spirit of liberality by the national government. The benefits which would result, in the increased amount and varied character of its products—in the enhanced value of labor, and the diversified nature of employments, would be of incalculable importance in a national point of view.

Dr Perrine, the projector of this nursery, has been American Consul at Campeche, for the last ten years, and during the greater part of that time, instead of devoting his time and advantages of situation, to the accumulation of wealth, was arduously engaged in the

collection of such plants as he thought could be turned to the improvement of the agricultural resources of his country—and particularly of such as were susceptible of being converted into useful articles of manufacture. He showed us many of his specimens; among them we discovered many which need nothing but the skill of our admirable manufacturers to transform them into rope, twine, and cloths of various kinds. Besides possessing high classical attainments, Dr Perrine is an excellent botanist, and withal an enthusiast in all that appertains to that interesting study, to agriculture, and to horticulture. With such eminent qualifications, he is preeminently suited to stand at the head of such an institution, and would, we are certain, reflect great honor upon our country's character, besides contributing largely to its individual and national wealth. Indulging in such views of his contemplated undertaking, in the sincerity of our heart, and in the singleness of our soul, we say, God speed the good work.—Balt. Farmer and Gardener.

#### ACCLIMATING NURSERY OF TROPICAL PLANTS.

We publish the following letter from Dr Perrine with great satisfaction, believing as we do, every man who adds to the productions of this country, acquires for himself a claim upon the gratitude of the public. It is much to be regretted, the unsettled state of the country, has so far deranged the doctor's plans, as to compel him to locate a temporary nursery at Key West. The enterprise is every way praiseworthy, and we hope will prove eminently successful. So far as this work, and our efforts can advance the views of Dr Perrine, they shall have our cordial support. We are sorry a catalogue of seeds and plants did not accompany his letter, as no doubt the variety is great, and would the more readily command the attention of the liberal and patriotic citizens of the Southern states. time, attention, and labor have been expended in procuring the means of establishing a nursery, and "as the laborer is worthy of his hire," we hope Dr Perrine will receive a liberal remuneration from a generous public.

### "KEY WEST, TROPICAL FLORIDA, 30TH JUNE, 1837.

MR EDITOR,—Having long been a fellow laborer in the great field of vege-culture, I respectfully address a few lines to your favorable consideration. With a large collection of seeds and vegetable

products of Yucatan, I left Campeche on the 28th of January last, and arrived at New Orleans, on the 11th of February, with the intention of proceeding by the first opportunity to the vicinity of Cape Florida, to commence my acclimating nursery of tropical plants. Having, however, waited in vain for a direct passage to this place, on the fifth June I embarked for Havana, which city I left on the 15th, and arrived at Key West on the 17th inst. The renewed hostilities of the Seminoles at the southern extremity of the peninsula, have rendered it impossible for me to locate myself on the main land, and hence my present impressions are in favor of selecting a spot in this or some other islet to plant my seeds and to make a preparatory garden or nursery. This new disappointment of my cherished plan, renders me still more anxious to excite some sympathy among the patriotic friends of the enterprise of acclimating tropical plants, which I have pursued upwards of nine years, unaided and alone. I therefore transmit to you a copy of a Circular by exgovernor Roman, President of the Agricultural Society of Louisiana, intended to be directed to the Presidents of all our Agricultural Societies of our Southern and Southwestern States, in which Societies exist, and to the Governors of such of the same States as have not yet organized such Societies. As my residence in Mexico, prevented my gaining access to the files of the Southern Agriculturist, I am ignorant of the condition of South Carolina in that respect, and, therefore, leave blank the direction of the aforesaid Circular, with the hope that you will be kind enough to fill it with "To the President of the Agricultural Society of South Carolina," or "To the Governor of the State of South Carolina," as circumstances may require.

Should you, besides directing said Circular, be also so kind as to publish it in your periodical, my gratitude shall be yours, and will be manifested in any way you direct. I believe that I have many quires of manuscript, whose publication in the Southern Agriculturist, might be acceptable and profitable to your readers; but until I can peruse your back numbers, my communications might embrace matters already before them, and hence my unwillingness to risk any thing previous to the acquisition of your back volumes. As I have no botanical works of the United States, of a later edition than Eaton's Manual for 1833, I must take for granted that the latter contained the names of all plants both indigenous and exotic

known at that period, until I can acquire a list of the plants subsequently discovered and introduced by others. A list of the tropical plants introduced by myself, shall be at your service. In short, I believe that you and myself can be mutually serviceable to each other in our respective undertakings, and to the agricultural prosperity of the whole Southern and Southwestern States. You will pardon the defects of this hasty and desultory communication, and I shall be greatly gratified by a few lines in return, the ensuing mail. Should I proceed to Washington this summer, my route will likely be via Charleston, when I shall do myself the honor to call on you and exhibit some samples of the vegetable products of Yucatan.

Very respectfully, your obedient servant,

#### HENRY PERRINE."

The following letter and resolution, show Dr Perrine's exertions have been untiring, and are properly appreciated by those who are personally acquainted with him, and know best the value of his acquisitions. The letter and resolutions being an open circular intended for the Governor of this State, we have thought proper to insert them here, as the best means of bringing the subject under the consideration of our Agricultural Societies.

New Orleans, June 1st, 1837.

SIR,—I respectfully invite your attention to the following resolution of the Agricultural Society, over which I have the honor to preside, and also to the appended resolution of the Legislature of this State, which were presented by a Director of the Society. The preamble to the resolutions of the Legislature, expresses our motive for thus endeavoring to facilitate the persevering enterprise of Dr H. Perrine, and I may add, that my personal knowledge of himself and his services, induces me to hope that the Agricultural Society, and the Legislature of your State, will render him some assistance, at least towards the passage of the bill alluded to, during the ensuing session of Congress.

Very respectfully, your obedient servant,

A. B. ROMAN,

Pres. Agricul. Soc. of Louisiana.

Resolved, That the President of the Board be, and he is hereby

authorized, to make such arrangements as he may deem proper with Mr Perrine for the publication, at the expense of the Society, of such part of his writings as may promote the interest of agriculture; and to procure from Havana and other parts, through Mr Perrine, such plants, as in his opinion, may become acclimated here.

The foregoing is a true copy from the Journal of proceedings of the Agricultural Society of Louisiana, at its meeting of the 7th March, 1837.

(Signed,) EUG. ROUSSEAU, Sec. A. S. L. New Orleans, May 27, 1837.

(No. 96.) Resolution. Whereas, in obedience to the Treasury Circular of the 6th September, 1837, Dr H. Perrine, late American Consul, at Campeche, has been distinguished by his persevering exertions to introduce tropical plants in the United States; and whereas, the Committee of Agriculture in Congress, on the 22d April, 1832, did report a bill to encourage the introduction and promote the culture of tropical plants in the United States by conveying conditionally to said Perrine, and his associates, a township of land in Southern Florida; and whereas, the gradual acclimation of tropical plants in all the Southern and Southwestern States may be better accomplished by their intermediate domestication in the tropical district of Florida.

Sec. 1. Be it therefore Resolved, by the Senate and House of Representatives of the State of Lousiana, in General Assembly convened, that our Senators in Congress be instructed, and our Representatives be requested to procure the passage of said bill into a law, under such conditions as may best comport with the public good.

Sec. 2. And be it further Resolved, That the Governor be instructed to forward a copy of this resolution to each of our Senators and Representatives in Congress.

(Signed,) ALCE LABRANCHE,

Speaker of the House of Representatives.

(Signed,) C. DERBIGNY,

President of the Senate.

Approved March 11th, 1837.

(Signed,) E. D. WHITE,

Governor of the State of Louisiana.

# ART. IV .- Bartram, the self-taught American Botanist.

JOHN BARTRAM, the celebrated and self-taught philosopher and botanist, was born in 1704, at Darby, in the county of Delaware, Pennsylvania. His grandfather of the same name, came over from Derbyshire in England, with the adherents of William Penn, in Early in life he manifested an ardent thirst for knowledge; but the great distance from Europe, then the seat of arts and sciences, and the infant state of the colony, rendered it difficult to obtain even a moderate education. The difficulties of his station, however, yielded to the resources of his own mind, and intense application. Associating with the most respectable characters, he obtained the rudiments of the learned languages which he studied with extraordinary industry and success. So earnest was he in the pursuit of learning, that he seldom sat at his meals without his book; his victuals being in one hand and his book in the other. He had an early inclination for the study of surgery and medicine, and acquired so much knowledge as to administer great relief to the indigent and distressed in his neighborhood; and as most of his remedies were drawn from the vegetable kingdom, he had an opportunity to prosecute the study of botany, which was his favorite object, together with natural history. Bred a husbandman, he cultivated the ground as the principal means of supporting a large family, and atttentive to the economy of nature, and observing the minutest operations, he prosecuted his labors as a philosopher. When ploughing or sowing his fields, or mowing his meadows his inquisitive mind was exercised in contemplating the vegetable system and animated nature.

He was the first American who conceived and carried into effect the design of a botanic garden, for the reception and cultivation of American vegetables, as well as exotics, and of travelling for the acquisition of them; and for the purpose of accomplishing this scheme, he purchased a plantation in a delightful situation on the banks of the Schuylkill, about five miles from Philadelphia, where he laid out with his own hands, a large garden, containing six or seven acres, comprehending a variety of soils and situations, which he soon furnished with an abundance of the most curious and beautiful vegetables, collected in his numerous excursions in different

parts of the country, from the Floridas to the Canadas. Botany being his favorite pursuit, he soon made such proficiency in it, that the great Linnæus, said in one of his letters, that he was the greatest natural botanist in the world. His progress in botany, natural history and philosophy, attracted the notice and esteem of the principal literary and eminent characters of America; among whom were James Logan, Esq., Dr Franklin, and Dr Kennersley, of Philadelphia, Dr Colder of New York, and Dr Clayton of Virginia; and introduced him to the correspondence and friendship of Peter Collins, Esq., which continued for nearly fifty years, and terminated only with life; Lord Petre, Dr Dellenius, Dr Hill, Gronovius, Linnæus, Professor Ralm, Sir Hans Sloane, Mr Casteby, Dr Fothergill, Mr Wrangle, &c., who furnished him with such books, philosophical apparatus, &c., as his genius and situation required, thereby lessening the difficulties with which he had to struggle in a newly settled country, and promoting the object which his benevolent mind had contemplated, in communicating his discoveries and collections to Europe. These communications occasioned him to be employed in collecting whatever was new and curious, to furnish and ornament the European gardens and plantations with the productions of the New World. His industry and success in the pursuit of science procured him fellowship in many literary and scientific societies in Europe, as those of London, Edinburgh, Stockholm, &c., and at last he was appointed American Botanist to George the Third, in which appointment he continued till his death, in September, 1777, in the 76th year of his age.

He employed much of his time in excursions through the provinces then subject to England, chiefly in autumn, when his agricultural avocations least required his presence at home. The object of these journeys was to collect rare and nondescript vegetables, fossils, &c. His ardor was such, that at the age of seventy he made a journey into East Florida, to explore the natural productions of that country. His travels among the native Indians were attended with much danger and difficulty, and the different parts of the country, from the shores of lake Ontario and Cayuga, to the source of the river St. Juan, contributed through his hands to enrich and embellish the grounds and forests of Europe with elegant flowering shrubs, plants, and useful and ornamental trees.

He was an ingenious mechanic. The house in which he lived he

built himself, after quarrying the stone; and he was often his own mason, carpenter, blacksmith, &c., and generally made his own farming utensils.

His stature was rather above the middle size, erect and slender, of a sandy complexion, and cheerful countenance, with an air of solemnity, his manners were modest and gentle. Amiable of disposition and liberal in mind, he was a lover of charity and social order; and active and temperate, he always maintained a plentiful table; and annually, on New year's day, he gave an entertainment at his own house, consecrated to friendship and philosophy. He was an advocate for liberty; and born and educated in the Society of Friends, he led a peaceful, useful, and pious life.—South. Paper.

# ART. V.—The Vineyards of Tokay, in Hungary. By C. MACKENZIE.

The vines when planted, are cut down at a knot, to within a span of the soil, and the superfluous shoots are cut off every spring, at the same place; thus, a large head is formed, which increases yearly. Late in autumn, these stumps are covered with earth, and each resembles a mole-hill: sometimes, even the branches, if designed for layers, are covered. So soon as the winter is over, about the middle of March, the stumps are again uncovered, and the soil about them turned up; this is followed by dressing, as soon as the season will permit; that is about the beginning of April.

Time, severe winters, and spring frosts, cause great ravages in the vineyards:—to make good such deficiencies, fresh vines are raised, by transplanting; and by planting the cuttings of known good and sound vines. The cuttings (the withered points being cut away,) are put knee-deep in the earth, with a little manure, the other end being only a span above ground; this is covered up, until it is probable it has begun to shoot, and the spring weather is no longer to be feared. When raised by layers, the soil is dug from about the stump and roots, about a foot and a half deep; these are then trodden to the bottom, so that the branches, where they are inserted in the stump, are under ground; the remaining part is laid down and covered with soil mixed with manure, so that their points

reach only a few inches above the surface. To each of these branches, which in time become a new vine, a stick is given.

Now comes the severest labor of the vineyard,— the digging or turning up of the soil; which is repeated three or four times before the vintage. Soon after the first digging, the sticks are driven in; to which, the shoots when about two feet long, are lightly bound;— pretty fast above, and loose in the middle. Weeds by this time again begin to grow; and the soil is again turned up to destroy them, and to keep it tight; but during the flowering, nothing is done; nature is left entirely to herself. This being over, the sticks are driven more firmly into the ground, and the vines which may have become untied, are better secured. The too luxuriant growths are taken away, and the vines are so ordered, that they require no farther care till the vintage, except that the soil is once more turned up.

Though, in warm seasons, the earliest grapes are ripe in the middle of August, it is the latter end of September before the greater part are eatable; and, as those for pressing must be fully ripe, the vintage is delayed as long as possible, generally until the feast of Saint Simon and Saint Jude, which falls on the 28th of October; if the weather is fine, the later the better, on account of the great quantity of half-dried luscious grapes, or troken-beers, which are necessary to form the Ausbruche, or Tokay wine, so much esteemed. So soon as they begin to grow ripe, guards are placed in the vineyards, to prevent the grapes from being stolen, and to drive away the birds.

To the troken-beers, the Tokay Ausbruche is indebted for all its richness. But their excellence depends greatly on the weather: every year does not produce them either in the same quantity or quality. Some years they fail altogether. If frosty mornings set in before the grapes are ripe, the Ausbruche will be hard and sour; yet frost, when not too soon, is advantageous. If wet sets in, at the time when, by the sun's heat, they ought to lose their watery parts and turn to syrup, it may easily be conceived what will be the consequence. These troken-beers are always trifling in quantity, compared with the other grapes; indeed, some years there are none at all.

In every country the vintage is a time of mirth and gaiety, but particularly so about Tokay. Many of the nobility, though they

have no estates, and live in distant parts of Hungary, have vineyards here; and business as well as pleasure brings many of them at this season. The wine dealers, likewise, come to make their contracts; and the friends of all concerned, from an understood, though tacit, invitation, come to join in the general festivity. The vintage is preceded by fairs; so that, during this season, all is life and bustle. The time for gathering being come, young and old, with merry hearts and active hands, repair to the vineyards, and ease the vines of their precious loads: but in doing this, the trokenbeers are picked from the rest, kept apart, and sold to those who make Ausbruche, by those who do not.

The ordinary grapes are trodden apart, and the juice taken out; the remaining juice is then pressed out from the skins and stalks. Both are commonly put together in tubs, no difference being made between the juice trodden out and that pressed out. The whole, when fermented, forms the common wine, which however is not sent out of the country as a delicacy, and consequently never reaches England. The troken-beers are likewise trodden out, and then have the consistency of honey; to this is added some of the common grape juice; and as the richness of the Ausbruche, or Maschlass, depends on the greater quantity of the juice of the troken-beers, the proportions vary according to the intent of the owner. The common proportion for an antal of Ausbruche, containing seventeen or eighteen gallons, is two bushels of trokenbeers; and for a cask of Maschlass, (which is only a less rich liquor,) the same quantity is taken: but then, the cask is about equal to two antals; so that only half the quantity of troken-beers are used to make Maschlass, as are used to make Ausbruche. But, as every husbandman does as he thinks proper, these two liquors are often very nearly alike, the principal difference consisting in the size of the casks.

The mixture being made, it is strongly stirred together. By this operation, the seeds are separated from the flesh of the grapes; these coming to the top, are taken out with a net or sieve. The liquor remains in the vessel, covered over for a couple of days, till fermentation begins; and this is suffered to continue about three days, according to the weather; that is, till the fermentation has properly mixed the fleshy pulp of the troken-beers with the common grape juice. The whole ought to be stirred every morning and

evening, and the seeds carefully taken out. If the fermentation be continued too long, the wine will receive from the skins a brown color, and form a great quantity of yeast and sediment in the cask. Nothing now remains to be done but to pour the liquor through a cloth, or sieve, into the barrels in which it is to be kept. The residuum is then pressed: some pour common grape juice upon this pressed residuum, but if the press be good, the common wine gains little by it.

When a considerable quantity of the troken-beers remain a short time together, some of their thick juice or syrup is expressed and runs out; this is carefully collected as a great delicacy: it is called essence, and has the consistency of treacle. No art is used to fine these wines, nor to make them keep. The barrels ought to be kept full, and their outsides free from wet and mildew.

Ausbruche is not made exclusively about Tokay: there is also a Saint George, a Ratchdorf, and a Menische, Ausbruche: the latter is red, and preferable even to Tokay. Some is made, likewise, in the county of Oedenburg.

The best of these wines do not long remain in the place of their growth; a great part is soon sent into the cellars of the nobility, in other parts of Hungary. The greatest quantities are to be found in the counties of Zips and Liptau, in the north, from whence they are sent into Poland. The Polish Magnates are the best customers, particularly for the Ausbruche, which is the dearest European wine. In Tokay a bottle of the best is always valued at about a ducat, or nearly half-a-guinea, English. A single glass, in any coffee-house or hotel in Pesth or Buda, will cost twenty creutzers, or eight pence, sterling. In England, a bottle of good Tokay costs a guinea.

Tokay is undoubtedly a very fine wine, but by no means adequate to its high price. There are few Englishmen who, except on account of its scarcity, would not prefer to it, good Claret or Burgundy, at one fourth of its price; indeed, some of the sweet Spanish wines are, in the opinion of many, equally good. Unless Tokay be very old, it is too sweet for an Englishman's palate.

#### ART. VI. - Rural Cemeteries.

Whatever truth there may be in the opinion, that animal putrefaction does not produce malarious disease or any wide spreading pestilence, there can be little doubt that air, charged with putrid miasmata, or with products of an animal decomposition arising from bodies confined in a small space, as in the case of private vaults when first opened, may, especially in impressible individuals, so powerfully affect the nervous system as to produce high nervous disorder, and that when such miasmata are absorbed by the lungs in a concentrated state, they may excite putrid disorders or dispose the frame to unhealthy exanthematous affections. Experiment seems to have shown, that when putrid substances are injected into the blood they are extremely deleterious, and that when exhaled from the dead body they have occasionally excited serious mischief in those exposed to their action. According to Baron Percy - one of the eminent army surgeons of France, during the domination of Napoleon - a Dr. Chambon was required by the Dean of the Faculte de Medecine of Paris to demonstrate the liver and its appendages before the Faculte, on applying for his license. The decomposition of the subject, given him for demonstration, was, however, so far advanced. that Chambon drew the attention of the Dean to it, but he was commanded to go on. One of the four candidates, Corion, struck by the emanations from the body as soon as it was opened, fainted, was carried home, and died in seventy hours; another, the celebrated Fourcroy, was attacked with a burning exanthema; and two others. Luguerenne and Dufresnoy, remained a long time feeble, and the latter never completely recovered.\*

The possibility of such evils is highly favorable to the view—now every where prevalent—that the cemeteries of large towns should be at some distance from the inhabited portions. Even were we to set aside hygienic considerations, there are others which come home forcibly to the minds of all. In every age it has been the custom, with mankind generally, to regard the depositories of the dead as objects of veneration. In ancient Rome, the place was held re-

<sup>\*</sup> Londe, Nouveaux Elemens d'Hygiene, Paris, 1827; and the editor's Elements of Hygiene, p. 110, Philadelphia, 1835.

ligious where a dead body or any portion of it had been buried; and the violation of the tombs was punished by fine, the loss of a hand, working in the mines, banishment, or death. Even in the savage Tonga Islands, the cemeteries are accounted so sacred, that if the deadliest enemies should meet there, they must refrain from attacks of hostility. Yet, occasionally, in a civilized age, and in countries unquestionably enlightened, in the ordinary acceptation of the term, the sanctuary of the grave is needlessly violated, and political anarchy, religious bigotry, infidelity, or what is esteemed the spirit of improvement, but which is too often the thirst after lucre, have subverted sensibilities which are ordinarily held sacred. How often has it happened in the progress of our own city to its present population, that places of worship have been disposed of, their cemeteries desecrated, and ashes, which, at the period when they were deposited there, it was presumed, would ever remain free from violation, been exhumed and scattered to the winds. These and other considerations have given rise to the beautiful cemeteries of Pere la Chaise, near Paris, of Mount Auburn near Boston, and of Laurel Hill near this city. The preceding remarks have, indeed, been suggested by a recent visit to the last of these. Situated at a convenient distance from the city of Philadelphia, yet so far from it as to almost preclude the possibility of future molestation in the progressive improvement of the city or from other causes; on a sylvan eminence immediately skirting the Schuylkill, and commanding a beautiful view of that romantic river; embellished in a manner most creditable to the taste and liberality of spirit of the respectable individuals under whose management it has been projected and carried into successful execution, - it is indeed a hallowed place, where affection may delight to deposit the remains of those on whom it has doated, -

"a port of rest from troublous toyle,
The worlde's sweet In from paine and wearisome turmoyle."

Philad. Medical Intelligencer.

# ART. VII.—Annual Exhibition of the Massachusetts Horticultural Society.

#### REPORT ON FRUITS.

The Annual Exhibition of the Massachusetts Horticultural Society, which has just closed, commenced on Wednesday the 20th inst., and continued during four days, until Saturday. The new and spacious Hall of the Society, No. 23 Tremont Street, was tastefully and appropriately decorated on the occasion. The great centre table was graced with two large and beautiful Orange Trees, from the Green Houses of the Hon. John Lowell. Large Pine-apples in a fine growing state, and Grapevines loaded with large clusters in a growing state, in decorated pots, by Mr Haggerston, from the houses of Mr Cushing, attracted very particular attention; as did also the beautifully arranged clusters of grapes and other rich fruits, by Mr Cowan, from the spacious houses of the Hon. T. H. Perkins.

On no former occasion have we witnessed so great a display of the most useful, as well as ornamental productions of nature, thus brought to so great a degree of perfection by the skill of man. Of flowers many new and splendid varieties, of an infinite variety of form, color, and shade:—of fruits also, many new and superior kinds, never before witnessed at any former exhibition.

The days of the exhibition were unusually fine, and the concourse of visitors far exceeded that of any former year, including a good proportion of the fair, and the fairest of the fair; and the brilliant display on this occassion, might well serve to remind us of Eden.

The following is a more particular account of the fruits which were sent for exhibition.

By Mr Haggerston, from the extensive Green and hot houses of J. P. Cushing, Esq., Belmont Place, in Watertown: Pears,—Williams, Bonchretien and Cushing's. Grapes,—Black Hamburgh, White Sweetwater or Chasselas, White Frontignac, do. Providence, and a vine trained spirally in an ornamented pot and loaded with fruit. All of which were very beautiful. Pine-apples of large size, growing finely in ornamented pots, the first ever witnessed at our exhibitions; Sago Palm, a noble and most useful plant—and the same which produces the Sago of Commerce; a plant as valuable in the Tropical regions as is corn with us.

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By John Lemist, Esq., of Roxbury,—a fine plant of Sago Palm. By Mr W. H. Cowan, Gardener to the Hon. T. H. Perkins, from his Fruit houses in Brookline. *Grapes*,—Frankindale, Black Hamburgh, Black Cluster, White Muscat of Alexandria, White Frontignac, Grizzly Frontignac, Black Frontignac, Syrian, White Chasselas, Golden Chasselas. *Peaches*,—Noblesse, New Royal George, Freestone Heath, Hill's Madeira, President, George IV. *Nectarines*,—Elrouge, Red Roman and Broomfield, all finest specimens of the most skilful cultivation. Also, Terraughtie Pearmain, a newly introduced and a handsome red fruit—varieties of Musk Melon.

By Mr Jacob Tidd of Roxbury,—Two bunches of Regnor de Nice Grapes, the largest bunch weighing 6 1-2 pounds.

By Aaron Mitchell, Esq., of Nantucket,—A bunch of White Chasselas grapes, and two bunches of Black Hamburgh, from a girdled vine—very large and beautiful, each bunch weighing 2 lbs., raised by his Gardener, Mr Wellwood Young.

By Mrs T. Bigelow, from her Green house in Medford,—Lemons and Oranges, very beautiful. Yellow Rareripe seedling Peaches, very fine; also, fine looking French Apples, name unknown—and Seven Years Pumpkins, very large, so called from the great length of time they will keep.

By Hon. E. Vose, President of the Society. *Pears*,—Napoleon, Urbaniste, Wurtemberg, eminently beautiful, William's Bonchretien or Bartlett, Andrews, Wilkinson, Lewis, Easter Beurre or Bergamotte de la Pentecote, Passe Colmar. *Peaches*,—Grosse Mignonne. All these fruits were fine specimens of finest kinds,—Also Lady Haley's Nonsuch, a beautiful fruit, and Acorn Squash, very fine, and keeps well a year.

By Enoch Bartlett, Esq., of Roxbury, Vice President of the Society. *Pears*,—William's Bonchretien or Bartlett, and Wurtemberg, both kinds eminently beautiful; also, Cushing, Striped, Doyenne or Verte Longue, and Fulton. *Apples*,—Gravenstien, Hawthorndean, Monstrous Pippin; also, long Cucumbers from Trieste.

By Mr Manning, from his garden in Dearborn Street in Salem. Pears,—34 kinds, many of them new, and such as have never yet been seen with us before. Jalousie, Harvard, Saunders Beurre, Belle Lucrative, Beurre Von Manim, Beurre Knox, Napoleon, Maria Louise, Beurre Duval, just come into bearing and bears well, Surpasse Virgalieu, Figue de Naples, Saint Ghislain, Summer Rose, Valle Franche, Pastorale, Fulton, Beurre Bosc, Wilkinson, Autumn

Superb, Henry IV., Styrian, Urbaniste, Verte Longue or Mouille Bouche, Green Pear of Yair, Julienne, Gloria, not the Gloria of any former exhibition, a fine looking fruit from Mr Parsons's tree, sent by Mr Knights, Beurre Spence, a celebrated new kind, now unripe, the tree bore this year for the first time. Chair a dame, Dearborn's Seedling, Beurre Colmar D'Autumn, Pope's Scarlet Major, Naumkeag, Jackman's Melting, a new fruit of a dark red color, very oblong and conical or Calabash formed-it is doubtful whether this is the right name: also two varieties of Pears without names, the one of a yellow and the other of a red color. Many of these kinds being now unripe, will be reported again on a future occasion. Apples,-Swaar, a name which signifies heavy, a fine looking fruit, fine and productive, Gravenstein, fine,-New Red Crab. Plums,-Green Gage, German Prune, French long Blue, name lost, a large, oblong, blue fruit, very productive and fine-Diamond Plum, a large, blue and beautiful fruit, the flavor good: a bunch of the tree bore for the first time exceedingly full. Sharp's Emperor, another new fruit, very large, pale, yellow in the shade, and red next the sun, and beautiful; a small limb of the young tree, bore this year a large crop for the first time.

By Mr Downer, from his place in Dorchester. *Pears*,—Duchesse D'Angouleme, Seckel, Beurre Diel, Wurtemberg, very beautiful,—Urbaniste, Bleecker's Meadow, Andrews, Dix, Cushing, Fulton, Harvard, Lewis, Washington, Passe Colmar, Bezi Vaet, Saint Ghislain, Moorfowls Egg, Iron. *Apples*—Pumpkin, Sweeting, Porter, Nonsuch, Sweeting, Seaver Sweeting, River Apple, Lady Apple, Pie Apple, Spitzemberg, Pearmain, Rhode Island Greenings, Yellow and Red Siberian Crab Apples and branches loaded with the fruit of the same. *Peaches*,—Rareripes. The fruits of Mr Downer were of finest kinds.

By B. V. French, Esq., from his place in Braintree. *Pears*,—Williams Bonchretien, fine—Arch Duke of Austria, which has been before noticed, form turbinate, faintly striped, and beautiful, the quality but ordinary,—Tillington, this name it is believed belongs not to this which is Urbaniste, but to another Urbaniste, Bleeckers Meadow. *Apples*,—Porter, Monstrous Pippin or Gloria Mundi, Yellow Bellflower, Garden Striped, Dutch Codlin, River Apple, Ruggles Apple, Siberian Crab, and branches of the same covered with the fruit, very ornamental. *Plums*,—Coe's Golden

Drop and Smiths Orleans, both superior kinds. Squashes,—Autumnal Marrow, fine large specimens of this fine kind,—Sugar Beets, very large and handsome, of a white color and of the true kind, the seeds received from France.

By Mr E. M. Richards, from his garden in Dedham. *Pears*,—Seckel, Verte Longue or Mouthwater, Grise bonne. *Apples*,—Benoni, Williams Favorite, American Summer Pearmain, Red Juneating, Orange Sweeting, Hawthorndean, Summer Gilliflower, and other kinds, all very handsome. *Peaches*,—Of five fine varieties.

By Mr Thomas Mason of the Charlestown Vineyard, from his Peach houses. *Peaches*,—Early Royal George and Royal Kensington. *Nectarines*,—El Rouge, Brignon, and Broomfield. *Grapes*,—From his Grape houses, Black Hamburgh, Black St Peters, Lombardy, Sweetwater or White Chasselas, and Golden Chasselas. All the fruits of Mr Mason were fine, and afford good evidence of his skill as a Cultivator. Also, Lima Squashes.

By Mr S. Pond, from his garden in Cambridgeport. *Pears*,—Williams Bonchretien, Andrews Julienne, handsome specimens. *Plums*,—Semiana or Imperative Violette, a fine productive kind.

By Ebenezer Breed, Esq., from his fruit houses in Charlestown. Pears,—Wurtemberg, Seckle, Williams Bonchretien, Swan's Egg. Grapes,—Black Hamburgh, all of the same fine quality, which this gentleman has usually offered for exhibition. Valparaiso Squash.

By Judge Heard, from his estate in Watertown. Roxbury Russetting Apples, of the growth of 1836.

By Mr Hamilton Davidson of Charlestown,—A handsome basket of Williams Bonchretien and Rouselette de Rheims Pears, and Musk Melons, the basket well decorated with branches of fruit of the Red Siberian Crab. Also fine specimens of Cucumbers.

By Mr Thomas Willot of Roxbury,—A large basket of fruit singularly decorated and surmounted by a branch of a tree and fruit, enveloped in the house of the hornet tribe. The fruits, consisting of *Pears*, Williams Bonchretien, and Wurtemberg; *Apples*, York Russett, Black Gilliflower; Blue Pearmain, and Baldwin; Rareripe Peaches, and Green fleshed Melon, were all very fine.

By Mr Dennis Murphy of Roxbury. Grapes,—Black Hamburgh, from his Grapery, very fine. Pears,—Williams Bonchretien and Dearborn's Seedling. Plums,—White Magnum Bonum, and Smith's Large Orleans.

By Mr R. Ward of Roxbury. Pears,—Williams Bonchretien and Seckel. A basket of fine Peaches and White Gage Plums.

By Mr John D. W. Williams, from his estate in Roxbury. *Pears*, —Williams Bonchretien, very fine, and Apples.

By Mr Samuel Phipps of Dorchester,—specimens of beautiful Nectarines.

By Messrs Winships, from their Garden and Nurseries in Brighton,—Branches and clusters of the Shepardia, very beautiful, also Passiflora edulis, with its curious and beautiful blossoms and eatable fruit.

By Dr S. A. Shurtleff,— Clingstone Peaches, also Tremont Peach, a fine looking large native seedling, from his residence in Tremont Street.

By Mr John A. Kenrick, from his Garden and Nurseries in Newton. *Pears*,— Williams Bonchretien, Mogul Sumner. *Peaches*,— Early York Rareripe, Prince's Red Rareripe, and Yellow Red Rareripe. *Apples*,—Hubbardston Nonsuch, Baldwin, Kenrick's Red Autumn, Pumpkin Sweet, Fennel sapsons.

By Mr Samuel R. Johnson, from his Garden in Charlestown,—White Sweetwater, or Chasselas, and White Frontignac Grapes, both very fine, from out of door culture. The White Gage Plums, which Mr Johnson exhibited are found to be identically the same with Prince's Imperial Gage. A kind wonderfully productive. These were from his celebrated tree, the fruit large and very fine. The tree, though not large, is annually loaded with fruit, and produced this year, by estimation, threee barrels. His Bolmer's Washington Plums of the largest size, measured seven inches in circumference. The tree produced about 1200 fruits this season, a large weight, from its superior size. Though this kind is not reputed so productive.

By Mr Sweetser, from his garden in Cambridgeport,— Mogul Sumner Pears.

By Mr Alexander McLennen, from "Oaklands" in Watertown, and the garden of William Pratt, Esq.—Black Hamburgh Grapes, fine specimens of his skill as a cultivator. Also, Green Persian Melons.

By Mr Jonathan Warren of Weston. Apples,—African, a dark red fruit. American Nonpareil. Also, Hercules club Gourd, very curious form, cylindrical, about three inches in diameter, and 2 or 3 feet long.

By Mr John T. Wheelwright, from his garden in Newton. Pears,—St. Michael, Bonchretien and Pound. Apples,—York Russetting. Peaches,—Two baskets of fine fruit.

By Messrs E. Dana & Co., No. 100, Faneuil Hall Market. Pears,— apparently the Urbaniste.

By Mr John Hill, No. 103, Faneuil Hall Market, from the farm of Mr David Hill in West Cambridge. *Peaches*,—Red Rareripes, fine; Lemon Peach, very large and beautiful, and evidently a synonyme of the yellow red Rareripe. By Mr A. D. Williams, from his farm in Roxbury,—Orleans apple, a large and beautiful yellow fruit. *Pears*,—William's Early, juice abundant, and of exceeding fine flavor.

By John Brown, Esq. of Concord,—Purple Detroit apples.

By Mr Wm. B. Sweet of Roxbury,—varieties of Apples, Pears and Plums.

By William Oliver, Esq. from his residence in Dorchester. Pears,—St. Ghislain, Seckel and Brocas Bergamott.

By Mr James Hunnewell, of Charlestown. Grapes,—Sweetwater, of fine appearance, and grown in the open air from a vine which yields 103 bunches this year. Isabellas, very fine, from a vine which produced 300 bunches last year.

By Mr John Rayner, of Boston,—St. Michael Pears.

By Mr J. Newhall, of New Ipswich, N. H.,—Ripe Figs of open culture; the fruit was formed the previous year, and matured in this. The small unripe figs were of the third crop of this season.

By Mr J. L. L. F. Warren, from his garden in Brighton. *Pears*,—Seckel, from a bud of two years' growth. *Apples*,—Porter's Seek-no-further, Golden Russetts, Joseph Sweeting, Lady Apple, Siberian Crab Apple. *Peaches*,—Warren's Native Peach, and Royal Kensington. *Tomatoes*,—Beautiful specimens of this truly invaluable vegetable, which should be an inhabitant of every garden. Also, a very large Savoy Cabbage.

By Mr Jacob Deane of Mansfield. Apples,—Seek-no-further, Wine Apple, Pumpkin Sweet, very large. Hayboy, a large flat fruit, of a dark yellow color, very sweet, fine and productive. Superb Sweet, a red striped fruit of medium size, very delicious and productive, and highly esteemed by him. Spice Sweeting, a large and eminently beautiful fruit, and now nearly ripe of a round form, skin smooth, of a delicate straw color, with a blush next the sun; flavor

sweet, spicy and delicious; the tree is stated to be a most abundant bearer. Peaches,—Large early Peach.

By John Mackay, Esq., of this city; from his farm in Weston. Pears,—Seckel, two baskets. Apples,—Pearmain, Hawthorndean, very beautiful,—Porter and Williams' Favorite, the two last named very fine.

By Joseph Balch, Esq., of Roxbury,—Seedling Peaches, very fine. *Pears*,—Cushing and Williams' Bonchretien, both handsome fruits.

By Mr E. P. Hathorne of Boston,—Sweetwater Grapes, the produce of out of door cultivation.

By Mr. E. Hathorne,—Cream Apples from Salem, a middle sized fruit, from Ossipee originally, of a fine flavor.

By Mr J. M. Ives, from his Garden in Dearborn Street, in North Salem,—Autumnal Marrow Squashes, an oval yellow fruit, of the finest grain and sweet flavor, the best Summer Squash yet known, and one of the finest for keeping, as they are easily preserved till June.

By Mr Guild, from his summer residence in Brookline,—Specimens of Turnip Cabbage, a singular production, of a globular form, solid like a turnip, and said to be fine.

By Mr. J. C. Howard of Brookline. Grapes,—Large, fine clusters of Black Hamburgh; also, fine Sweetwater, the produce of open culture.

By Mr John Lewis Russell of Salem. Apples,—High Top Sweeting. Also, Long Stem Apple, raised by Mr Andrew Cushing of South Hingham. Pears,—Cushing Pears, the fruit of extra size, raised by Capt. Charles Shute of South Hingham, from a sucker of the original tree, now about 30 years old. Also, another fruit, without name, Pear shaped, skin covered with very dark yellow russet, from a tree nearly a century old, from Mr David Cushing of South Hingham.

By Mr C. Ford of Dorchester,-Large Blue Pumpkins.

By Mr Cole L. Kendal of Charlestown,—Summer Squash, from Constantinople, a large, oblong, pale, ribbed vegetable.

By Mr A. H. Safford of Cambridgeport,—Pine-apple Squash, so called, very large and oblong.

A curious Cucumber was offered for exhibition, about seven or

eight feet long; its form reminded many of a serpent; sent from an unknown source.

By John Breed, Esq., from Belle Isle,—a remarkably large, blue Squash, of an oblong or truncated form, weighing 80 pounds, apparently of the Valparaiso kind.

For the Committee.

#### WILLIAM KENRICK, Chairman.

#### REPORT ON FLOWERS.

It has again become our duty to make a Report of the Annual Exhibition of Flowers, at the Rooms of the Massachusetts Horticultural Society. The contributors were numerous; the contributions were liberal; and many of the specimens of surpassing beauty. As a detailed report of the fruits, and some general remarks of the flowers have already appeared in the Report of Mr William Kenrick, Chairman of the Committee on Fruits; and as it is understood a detailed report of the Plants and Flowers will be given in the respective magazines of Messrs Breck & Co., and the Messrs Hovey, we shall report in general terms.

The plants from the Hon. John Lowell of Roxbury, in addition to two very splendid Orange Trees, were in fine order, and were much admired.

The Palms and other plants from the garden of J. P. Cushing, Esq., of Watertown, by Mr B. Haggerston, added much to the general effect of the exhibition. Mr Haggerston also supplied the tables with rich vases and a profusion of cut flowers, wreaths, &c.

From the Hon. T. H. Perkins of Brookline, by his gardener, Mr W. H Cowan, a splendid display of cut flowers, arranged on stands with great taste. Mr Cowan deserves our thanks for his very liberal supply.

The beautiful Acacias, and other plants, in all about 70 specimens, from Marshall P. Wilder, Esq., of Dorchester, were in fine order. The fine and delicate foliage of the Acacias was much admired.

John Lemist, Esq., of Roxbury, decorated our tables with some of his choice and rare plants. The Sago Palms, Heaths, &c., were in fine order.

John D. W. Williams, Esq., of Elm Hall, Roxbury, sent some very choice specimens by his gardener. The plants were not only rare,

but they were in a state of high cultivation. The best specimens of China Asters in the rooms were from Mr Williams.

J. C. Howard, Esq., Woodland, Brookline, a splendid plant;—Dahlias and other cut flowers, bouquets, &c.

B. V. French, Esq., From his garden at Braintree, a large supply of cut flowers, evergreens, &c.

From the garden of Mr John Richardson of Dorchester, a variety of cut flowers.

By Mr J. Towne of Boston, several extremely fine specimens of choice and rare Heaths.

Mr Samuel Sweetser of Cambridge, some charming little flowers in pots.

The Messrs Winship, of Brighton, two wagon loads of pot plants and cut flowers, some of them of great beauty. Mr Story will please accept our thanks for his kind attention and for his liberal supply of evergreens.

By Mr William Wales of Dorchester, 20 fine specimens of greenhouse plants. We noticed particularly a very fine Heath and a yellow Tea Rose; there were several other plants in Mr Wales' collection of great beauty. Also, a splendid bouquet.

Several fine plants from the Messrs Hovey,—a yellow Tea Rose of great beauty.

From the Botanic Garden, Cambridge, by Mr W. E. Carter, a large supply of plants, many of them fine specimens.

Mr Mason of Charlestown, a choice variety of pot plants, some rare and fine. Also, a liberal supply of cut flowers, and some handsome bouquets, &c.

Mr D. Murphy of Roxbury, furnished upwards of 20 choice plants; two splendid bouquets, and some cut flowers.

Dahlias.—The display of Dahlias was extremely fine and greatly surpassed our expectations. To give a list of the names of all the varieties exhibited, would exceed our limits; we shall therefore confine ourselves to the names of a few in the collection of the principal growers, viz:

In the collection of M. P. Wilder, Esq.—Conqueror of Europe, Dodd's Mary, Dodd's Mary Queen of Scots, Mrs Broadwood, Elphinstone's purple perfection, Lavinia, Bride of Abydos, King Otho, Stone's yellow perfection, Golden Sovereign, Desdemona, Queen Elizabeth, Hermione, Sir Henry Fletcher, Lady Fordwich, Gem,

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M'Kenzie's Contender, King of Beauties, Marquis of Northampton, Douglass' Glory, Dictator, Widnall's Clio, Irwood's Ariel, Criterion, Jupiter, Garnier's Princess Victoria, &c.

In the collection of the Messrs Hovey.—Princess Victoria, Marchioness of Tavistock, Mary Queen of Scots, Mary, Conqueror of Europe, Sulphurea elegans, Mrs Broadwood, Juliet, Elphinstone's purple perfection, Gem, Sir Henry Fletcher, Hermione, Golden Sovereign, Rosa superba, Red Rover, Stone's yellow perfection, Bride of Abydos, King Otho, Lavinia, Ariel, Beauty of Dulwich, Fisherton Rival, Star, Jupiter, Glory, Mrs Wilkinson, Lady Fordwich, Exemplar, Cræsus, &c.

In the collection of Mr S. R. Johnson.—British Queen, Elphinstone Polyphemus, Duchess of Buccleugh, Augusta, Mrs Wilkinson, Rainbow, Widnall's Clio, Princess Victoria (Garnier's;) Douglass' Criterion, Metropolitan perfection, Brown's Desdemona, Gaines' Harlequin, Royal Adelaide, Rosea Speciosa, Widnall's perfection, Smith's Napoleon, Lady Brougham, Newberg's Duke of Bedford, Jupiter, Mountjoy's Burgundy, Angelina, Lady Fordwich, Duchess of Bedford, Countess of Barresford, Erecta.

In the collection of Mr S. Sweetser.—Apollo, Augusta, (Douglass';) Beauty of Sheffield, Bride of Abydos, Beauty of Stow, Countess of Cork, Countess of Liverpool, Criterion, (Douglass';) Desdemona, (Brown's;) Douglass' Glory Granta, Jupiter, Golden Sovereign, Jackson Rival, Lady Fordwich, Lavinia, Metropolitan Calypso, Mrs Wilkinson, Napoleon, (Smith's;) Othello, Pindarius, Queen of Dahlias, Springfield Rival, Stone's yellow perfection, Lady of the Lake.

In the collection of Mr D. MacIntire.—Juliet, Dodd's Mary, Mrs Broadwood, Mary Queen of Scots, Conqueror of Europe, Golden Sovereign, Stone's yellow perfection, Red Rover, Star, Rising Sun, Young Black Ajax, Exemplar, Marquis of Northampton, Dictator, Bride of Abydos, Angelina, Douglass' Glory.

There were also some very fine specimens of the Dahlia, and splendid bouquets, from Messrs John A. Kenrick, J. Breck & Co., Howard, Carter, Winship, W. Kenrick, Weld, Mason, Murphy, Wilson, and Walker.

The celebrated Cobbett states that he was asked, (and the question has often been put to ourselves,) what is the use of flowers? Mr Cobbet replied by asking another question. What is the use of

any thing? We shall answer the inquiry in the language of Miller, "Who would wish to live without flowers? Where would the poet fly for his images of beauty if they were to perish for ever? Are they not the emblems of loveliness and innocence—the living types of all that is pleasing and graceful? We compare young lips to the rose; and the white brow to the radiant lily; the winning eye gathers its glow from the violet, and the sweet voice is like a breeze kissing its way through the flowers. We hang delicate blossoms on the silken ringlets of the young bride, and strew her path with fragrant bells, when she leaves the church. We place them around the marble of the dead in the narrow coffin; and they become symbols of our affections; pleasures remembered, and hopes faded, wishes flown, and scenes cherished the more that they can never return. Still we look to the far off spring in other valleys; to the eternal summer beyond the grave, when the flowers which have faded shall again bloom in starry fields, where no rude winter can in-They come upon us in spring like the recollections of a dream, which hovered above us in sleep, peopled with shadowy beauties, and purple delights, fancy broidered. Sweet flowers! that bring before our eyes scenes of childhood; faces remembered in youth, when Love was a stranger to himself! The mossy banks by the way side, where we so often sat for hours drinking in the beauty of the primroses with our eyes; the sheltered glen, darkly green, filled with the perfume of violets that shone in their intense blue, like another sky spread upon the earth; the laughter of merry voices; the sweet song of the maiden—the downcast eye, the spreading blush, the kiss ashamed at its own sound-are all brought back to the memory by a flower."

For the Committee.

SAMUEL WALKER, Chairman.

#### ART VIII .- Miscellaneous Articles.

HORTICULTURAL ANNIVERSARY .- On the 20th ult, at 12 o'clock, an excellent address was delivered before the Massachusetts Horticultural Society by WILLIAM LINCOLN, Esq. of Worcester .-Horticulture has been made the subject of so many able discourses, and been brought before the public in so many forms and vehicles, that we had quite despaired of witnessing any novelty on this useful but hacknied topic. Mr Lincoln, however, succeeded in rendering his observations at once interesting and amusing. Orator opened new avenues, and gave us new points of view, where common observers would have seen nothing but every day appearances, and uttered nothing but common place matter. By tracing and adverting to the annals of the first settlers of New England, and presenting his auditors with facts not generally known, but highly deserving to be held in lasting resemblance, he awakened and enchained attention, and impressed the memory with sketches and reminiscences, which will not be erased while the tablet has existence. The audience was one of the most intelligent and intellectual we have ever had the honor to assemble with, and appeared to appreciate the feast of intellect, with which they were T. G. F. favored.

We publish the Reports of the Committee on Fruits and Flowers, exhibited at the late Horticultural Exhibition. It was our intention to have abridged these documents, and added some remarks of our own, but upon further consideration, thought best to publish them entire. We are aware that details of our exhibition cannot be interesting to all our patrons, but for a majority of them it will undoubtedly, as a matter of record. We have not room in the present number to make any additions, even were it necessary. In a future number we intend to make some remarks, especially upon the Dahlia, which never appeared in such beauty and splendor at any previous exhibition.

J. B.

REMARKS ON THE CULTURE, &c. of Hydrangia Hortensis. I send you a few remarks on the Hydrangia hortensis. Last August, I took cuttings from plants that had lived through the

winter with us, about six inches in length. They were planted under a hand glass, in a mixture of loam, leaf mould, and sand, in a shady situation, and well watered to settle the soil. The hand glass ought not to be removed, ecxcept to clear the plants from weeds and decayed foliage, until the beginning of October, when they will be well rooted. I pot them in 60's. Give them an airy situation through the winter. If they are kept in a temperature from 40 to 50° so much the better. About the first week in February, I select the strongest plants, and place them near the glass in a pine-pit: this excites them to grow, and then it is perceptible which will flower. I then pot them in 32's. Place them in the pine-stove again, near the glass, with a feeder of water under them, until the petals are partly expanded, and begin to assume their colors. I then harden the plants by degrees, until they will stand the air of the greenhouse, where they will exhibit a striking appearance and continue in flower for months. There are plants here which have stood in the open border for years, but are usually killed to the ground by the winter's frost. They always grow again from the root the following summer. While this is the case here, a neighbor of mine, less than half a mile distant, has three plants which have attained the height of four feet. They flower freely, and scarcely suffer from frost. The color of the flowers is a fine blue, which leads me to think they resist the cold better by showing this color. The soil in which these plants grow so luxuriantly is of a dark color, and was formerly a coal field, and small pieces of coal are still found mixed with the soil. It would appear that the spongioles of the plant, by which its nutriment is drawn into its system, is there retained. For example, I took some cuttings of Hydrangia plants last August, and stuck them in the compost alluded to above: I then potted them in three parts red loam, the remaining part rotten manure and leaf mould. The result was, that the cuttings taken from my neighbor's plants produced blue flowers, whilst the cuttings taken from my own plant were of a pink, or rose color. Both were grown in the same soil, temperature, &c., and in every way treated alike. - Floricultural Magazine.

ON THE CULTURE OF THE COCKSCOMB.—I make the first sowing of seeds about the first of April, and the second towards the middle of May, for a later succession. The soil I use is a mixture

of loam, leaf mould, and sand, about equal parts of each; the seeds are covered half an inch deep, with the same mould, finely sifted, made smooth, pressed gently down, and then watered. They are then, when the first rough leaf appears, about the size of a sixpence, potted off, using what are called small sixties (three inches diameter) with two plants in each pot, at opposite sides covering the whole of the stem, that the cotyledon appear but just above the soil. They are then gently watered with a fine rosed watering pot, and placed in a melon or cucumber frame, where they remain till the roots have partially surrounded the bole of earth, when they are again shifted into single pots, about four inches diameter, still using the same soil; they are again placed in the frame, and treated as before, keeping the soil at all times moist. They are thus treated, shifting them at various intervals, as the roots appear to require it, keeping them in the frame as long as possible, as they will thrive better there than elsewhere, and if managed as directed above, they will require pots 10 to 12 inches diameter, and if the combs are of a good kind, they will measure the longest way 9, 10, and some 12 inches across.

I have also found recent horse droppings, when mixed with the soil about three weeks before using, to be a very excellent compost, and with this I have grown larger combs than with any other compost I have tried. When the plants have attained their full growth, or nearly so, they are then removed to the shelves of the greenhouse, and placed among other tender annuals, where they present a peculiar and interesting appearance.— Marnock's Flo. Mag.

On Tropeolum Aduncum.—Tropeolum aduncum is a beautiful half-hardy annual, deserving a place in every flower garden, as it may be made to flower in the open air for full five months in the year, and continues covered with a profusion of flowers, supporting itself by the petioles of the leaves, clasping whatever it approaches. It is a very suitable plant for training on wire trellising, baskets, &c., or planted in a row, a foot and a half apart, trained to stakes from six to ten feet high, the lateral branches if permitted will meet, and will then present a beautiful appearance. But it displays its greatest beauty when planted single, and trained in a pyramidal manner, its lateral branches so thickly set with flowers hanging in graceful folds of floral drapery. Trained as a pyramid it has a

pleasing appearance, and nothing more is necessary than to place a single stake by each plant, and continue to tie three or four branches up as leaders, leaving the others to grow in their natural forms. To have it early in flower, it should be sown in pans in March, and potted off when the plants have four leaves, into sixty-sized pots, and shifted as often as they require. They thrive best in a free rich moist soil. The plants will come into flower in May, which will be the proper season to plant them out. They are sufficiently hardy to bear the slight frosts of that month for those who have not frames, &c., if sown on a warm border in April, as it will bear transplanting well; when the plants are sufficiently strong to remove, say from six to eight inches high, they may be placed in their final situation. But if sown much later, as it is of such rapid growth, it will flower equally well; the only difference is that a month or two of its flowering is lost.—I am persuaded that it only requires to be known, to become generally cultivated .- Ibid.

Successful Method of Increasing the Sweet-scented China Rose,—its varieties, and Roses of similar habits.—Mr M'Intosh proposes, (what has long been practised by the gardeners in this part of the country,) to take the cuttings off after the flowering season, and plant them in rich light soil, under a hand glass, in a cool shady situation. When plants of a large size are required, the process of budding them on stalks of the wild roses is to be preferred.

Otto or Roses is made from the hundred-leaved rose, (Rosa centifolia,) which species is also used exclusively in the distillation of rose water. The genuine otto of roses is not, it is said, prepared by distillation, but by putting a quantity of carefully picked rose leaves into a jar or cask, with just sufficient water to cover them. The vessel is then set in the sun for a few days, and in about a week the otto (a butyraceous oil) collects in the form of a scum upon the surface, and is removed by a piece of cotton.—Conversations on Nature and Art.

ON THE GERMINATION OF OLD SEEDS.— The germination of seed, supposed to have lost their vegetative principle, may be greatly accelerated by immersing them in Oxalic Acid, or putting them in a cloth moistened with the acid. They are not to remain in the cloth any longer after the germination has commenced. By attending to the foregoing, seeds have vegetated after being kept thirty years.

## QUINCY MARKET.

#### [Reported for the Horticultural Register.]

APPLES, Winter,	barrel, 1	75 to	2 25
Good Fall,	bushel,		1 50
BARBERRIES,	do.	75	1 00
BEETS,	do.	75	2 00
BEANS, White		50	2 75
Shell, Saba,	quart	20	
BROCOLI,	head	121	25
CABBAGES,	dozen	50	75
CAULIFLOWERS,	head	12	25
CARROTS,	bushel	<b>7</b> 5	
CELERY,	root	6	12
CUCUMBERS, for pickles,	hundred	20	
CORN, (Green)	dozen	12	
CRANBERRIES,	bushel, 1	50	
GRAPES,	pound	75	
LEMONS,	box 3	00	3 50
MELONS, (Musk)	each	12	50
(Water)	do.	12	50
NUTS, Almonds, (Soft shelled)	pound	7	8
(Hard)	do.	4	5
Filberts	do.	3 3-4	4
English Walnuts	do.	5	7
Castana,	do.	3	4
Pea Nuts,	bushel 1	25	1 50
ORANGES,		00	5 00
ONIONS,	bushel 1		
POTATOES, barrel, 1 00 a 1 25 -	do.	50	
PEARS,	peck,	67	75
PEACHES,		00	2 00
PLUMS,	quart	20	
PEPPERS,	pound	4	
SWEET POTATOES,	bushel 1		
SQUASHES, Crookneck,	pound	1 1-2	2
	pound	3	
TURNIPS,	bushel	75	
TOMATOES,	peck,	20	25
Boston, Oct. 2, 1837.			

## HORTICULTURAL REGISTER.

AND

#### GARDENER'S MAGAZINE.

NOVEMBER 1, 1837.

ART. I.—On Transplanting Ornamental Trees, in Towns and Cities. Communicated for the Horticultural Register, by EDWARD SAYERS.

THERE are but few subjects of a more engaging and useful nature in the environs, and indeed in the interiors of Towns and Cities (where a proper space can be admitted) than the presence of ornamental trees that at once give a pleasing variety to the scene, and add to the comforts of the citizen by their cooling shade in the summer season. But, although this branch of arboriculture is so much cherished, in almost every part of the Union; by general observation it will be seen, that, many failures happen in planting; and that, many trees are altogether misplaced, owing to a mere want of consideration, at the time of planting and a trifling additional expense.

The first consideration in this, and indeed in all other description of ornamental planting, is, in the selecting of the proper kinds of trees adapted to the purpose, that will thrive and have a healthy appearance in the situation they are planted in. The best and surest method to this method of planting, is, to select such trees as are of an ornamental character and thrive well in the neighborhood of the town or city they are to be planted in: the choice of the kinds should be made from trees fully grown, from which the true characteristic and habit can be seen. There are many kinds of trees well adapted for this purpose in the different

sections of this country and although, perhaps the very kinds that are the most adapted and ornamental in one Town are not so in another. This depends on climate and location. The Alianthus glandulosa or Tree of Heaven and the catalpha syringifolia answer admirably well as ornamental trees in New York city; their habit being well adapted and hardy enough to withstand the climate; but in Boston, Albany and the colder places, the winter's severity acts on their system and injures them materially; on the other hand, the Maple, the Lime, the Horse-chestnut and Elm thrive well in New York and almost every city they are planted in.

The kinds of trees being decided upon, the next thing is the selecting them for planting which in all cases I should recommend to be taken from Nurseries, although in many cases, trees do well taken from woods, it cannot be recommended as a general mode to be followed in planting. Trees taken from woods rarely possess the proper qualities for this kind of planting; in woods, trees generally grow thickly together, consequently their bark is thin, the roots large, with few fibres and their tops slim and weakly; these consequences arise from their being excluded from a free access to the sun and air; which so much improve the habit and constitution of trees for transplanting purposes. In the act of planting trees of this kind they are generally divested of their roots and tops, the very organs that draw food and nourishment to the tree, therefore, without very favorable circumstances it must eventually die; on the other hand trees grown in a nursery are mostly well rooted and have fine healthy, well formed tops and other requisite properties for removal.

Having selected and procured the trees, the next thing is the planting, which is often done by digging out a few shovels full of gravel and placing a tree in a hole not sufficient to receive the roots of it. In this situation a tree being deprived of most of its roots and branches, makes a feeble effort of growth in the Spring; but, so soon as the dry season commences, it presents to the planter dead leaves and a lifeless pole. The proper manner to plant a tree in such places is, to take out a large hole say two cartloads of gravel and like, which is to be filled in with the same quantity of good loam with a portion of well rotted manure incorporated therewith. The tree is then to be carefully planted therein, observing well, to spread the roots in their natural position and tread the earth care-

fully about them, which if very dry pour into it a pail or two of water to make it adhere more closely to them.

The trees being planted they should immediately be protected by boxes, stakes or otherwise in order to guard off cattle or other things that are liable to come into contact and move them from their position, which will deter them from taking root and growing freely in the Spring.

When the trees begin to grow in the Spring apply a pail or two of water to each every two or three days through the months of May and June, when they will be well established and need no other care than being well protected and occasionally pruned.

The best time for planting trees on dry bottoms is at the fall of the leaf; in most low situations early in the Spring.

#### ART. II .- Tendency of Soils to Deteriorate.

The natural, the inevitable tendency of all cultivation of the soil, is deterioration. The richest and most fertile, contain but a certain proportion fit for the purposes of vegetation; and every crop taken from the soil, sensibly lessens this quantity. The result therefore must be, that continual cropping will reduce the best soils to barrenness, until, where circumstances admit, nature by her gradual method of repairing wrongs, imparts a degree of fertility. It is however possible to counteract this tendency to sterility in soils; to prevent the exhaustion of the qualities necessary to support vegetable life; and the difference between good and bad farming, or proper and improper cultivation, may be determined mainly by a reference to this single result.

In this country we can hardly form a correct idea from anything around us, of the frightful barrenness to which fertile soils may be reduced by improper management. Cultivation is here so young, that had it been of the worst description it would hardly have been possible to have exhausted so soon the treasures that had for centuries been accumulating in our soils. Still there are examples in the United States, where soils have nearly reached that point from which a restoration to fertility is impracticable. Soils of a silicious nature, or that are inclining to sand, are the most easily and quick-

ly reduced. Of this, the southeast part of Massachusetts, and parts of the southern States at the present time, and parts of Long Island as it was some thirty years ago, furnish striking proof. When cultivated without regard to consequences, the nutritive part of such soils is quickly exhausted; the little vegetation produced is not sufficient to prevent the burning effect of the sun: the roots of the grasses are unable to fix and bind the soil; it becomes loose and floating; plants root themselves with more and more difficulty, and at last what was once a fertile plain becomes a sandy waste, where cultivation is impossible.

It is in the old world that this process of deterioration may be the most clearly traced. To renovate, seems to have formed no part of the ancient profession of agriculture. In all the writings of antiquity there is scarcely a hint that manuring, or in any way improving cultivated lands, was practised to any extent. Now and then, where nature had set the example of imparting fertility by the annual overflow of rivers, man seemed inclined so far to imitate her works, and irrigation for ameliorating land was frequently adopted. But this was about the extent of ancient attempts at improved cultivation, and the result has been such as might confidently have been predicted. The regions of the east that two or three thousand years since were as the garden of Eden for beauty and fertility, have gradually become sterile and worthless; and tracts of country that once supported a thriving and industrious population, have from the action of the causes alluded to above, become deserts, in which the solitary camel can scarce find a shadow of vegetation to supply his easily satisfied wants. Mesopotamia; parts of Syria and Palestine; Edom, and parts of Arabia Felix; many parts of the north of Africa; and no inconsiderable portion of Asia Minor, have thus become hopelessly barren. The finest of wheat can now no longer be grown, on the plains where once the reaper filled his arms with the yellow sheaves. They were ceaselessly cropped, until the soil was so exhausted, that the unaided efforts of nature were unable to restore fertility, and the result is perpetual barrenness.

To counteract this tendency to sterility, is the business of the farmer; and on the possibility of doing this, rests the whole system of improved agriculture. Science has here come to the aid of the cultivator of the soil, and by revealing the agents and promoters of

fertility has greatly assisted and simplified the processes without which all would be still doubtful and uncertain. The action of manures has been ascertained; the value and activity of the various salts formed by the decomposition of animal and vegetable matter in part determined; the aid which the mineral earths afford vegetation has been carefully examined; and those combinations of soil the best calculated to induce fertility been accurately investigated. It has been shown that to take from the soil, without making correspoding returns, is suicidal policy; and that if this point is properly attended to, land can be cropped without danger of deterioration.

Manure then, is the sheet anchor of the farmer. It is to this source of fertility he must look for the renovation of the soil, and the means of continued productiveness. And it is to manures produced from his fields, from his herds and his flocks, from decayed vegetable and animal matter, that he must look for this result. These are the true fertilizing ingredients; and though other agents may be useful as exciting these to action, yet these may be considered as constituting the food of plants, the cause of growth and nutrition. The application of the exciting mineral manures, such as lime and gypsum, is productive of the happiest effects, for the reason assigned above; yet they are not so absolutely essential to the improvement of the soil as those that have a vegetable or animal origin. Matter which has once lived, which has already taken the forms of organized existence, more readily assumes the forms of organized life, and is more easily assimilated, than that which has never undergone such a change. It is the office of the vegetable to take the crude atoms of matter as they exist in the soil, and prepare them for the support of animal life; and when this has once been done, though a partial decomposition may have been effected, a renewal of the process is comparatively easy and certain.

In connection with the preparation and application of manures, the next most important step which modern agriculture has taken to prevent a deterioration of the soil, is rotation in crops. Judiciously conducted, the result is certain; exhausted lands are restored, and the profits of the agriculturist greatly increased. It was formerly the custom to let lands suitable for grass remain for that purpose alone; while those suitable for the plough were annually subjected to its use until exhaustion forbid. It was then left

to the restoring processes of nature. There were at the beginning of this century, lands in the farming sections of England which it was well known had lain in grass for five hundred years, and there were other tracts which had been as constantly submitted to the plough, or at least as often as the soil promised to repay the expense of cultivation. This system has been abandoned; a more enlightened system of agriculture has prevailed; and the products in consequence have been more than doubled. The course of rotation is indeed variable in different districts, both in Europe and in this country, but it is founded on the same great principle, that different plants take up different ingredients from the same soil, and from different depths, and that a new plant will flourish in a soil where one of the same kind previously cultivated could not succeed at all. Thus in England, in Holland and Belgium, in some parts of Germany and France, and in some few instances in this country, a regular course of cropping adapted to the soil, has been adopted with the happiest effect. This course which varies from three to six years, according to circumstances, embraces roots, grains and grasses, and taken in connection with thorough manuring, which this system enables the farmer to practise, not only improves the quantity and value of each kind of crop, but is deepening, enriching and fertilizing the soil. Manure, and the rotation of crops, are then the great means to which we must look to preserve our now fertile plains from the fate which has overtaken so large a part of the east; and they are fortunately both easy of application, and entirely within our reach.—Genesee Farmer.

ART. III.—Rural Scenery. Communicated for the Horticultural Register, by EDWARD SAYERS.

ON THE MORE GENERAL INTRODUCING OF NATIVE PLANTS INTO ORNAMENTAL PLANTATIONS AND FLOWER GARDENS.

It is much to be regretted, that in a country possessing so many fine varieties of native shrubs and herbaceous flowering plants, as are to be found in the different parts of the Union, they are not more generally introduced into the ornamental and flower garden departments.

It is not my province in this place to point out any reasonable supposition why the preference of planting of exotic plants of less beauty and unpossessing the hardy and requisite qualities with which nature has endowed those indigenous to this country, nor to deter in any way the interest taken in endeavering to acclimate and naturalize any foreign production hitherto or to be in future introduced; for I am well aware that such introductions are the very nerve of horticultural enterprise, and connect as it were a friendly and really useful feeling between persons of the first character in the different parts of the known world. But after giving way to such feelings it naturally becomes the interest to investigate the natural productions of the country in which is considered our native home and under this impression I shall proceed on my subject of introducing more generally native plants in ornamental plantations.

The most ornamental and the least attended to native forest tree is, the Liriodendron tulipa or the tulip tree, (generally known as white wood.) The tree is a native of New York state and will withstand the winters in almost any part when well established. The tree when grown separately forms a fine conical shape and when in full foliage presents a richly clad green. The leaves are of a singular appearance, being precisely in shape of a saddle, and hence the name of (saddle tree.) The timber of the tree is used in many ways for light purposes, as shelves of houses, window and coach blinds, and the like purposes and is extremely easily worked with edge tools. To this may be added a long list of the different varieties of maples, elms, oaks, chestnuts and the like as deciduous trees; and the various kinds of firs, arbor vitea, cedar and the like as evergreens too well known to require any comment under this head.

The most exquisite native shrub is the Magnolia glauca, a native of the swamps of New Jersey, which when in blossom its fragrance is breathed for some distance around. It seems to be a beautiful economy in nature to place so beautiful a plant of so exquisite flavor in a situation when at the time of its flowering the effluvia arising from the swamps in which it grows is of a disagreeable nature even to the passer by. The Magnolia appears to be altogether local to such places, and consequently thrives best in moist shaded places, and is particularly adapted (where it seldom finds a place) to the concealing unsightly places in close confined yards, side en-

trances and the like; where if generally grown it would in a measure counteract the unpleasant effluvia arising from such places by its fragrance when in flower. To this may be added a numerous class of hardy flowering shrubs, as the different varieties of Azalias or American honeysuckles. The Kalmias Rhododendrons, Andromedai and many other pretty kinds — the flower garden could also be decorated at almost every part of the flowering season with native flowers, as the Anemone, and vernal flowering plants of the spring, and in the summer and autumn months the many varieties of Asclepias, Lobelias.

The many pretty varieties of ferns may also be introduced to a very good purpose on Rockery, and the different kinds of vines for the purpose of covering trellis arbors and the like places in gardens and ornamental departments.

The principal object to be taken into consideration in this kind of planting is, to take particular notice of the different location and soil the plants naturally grow in; and to endeavor if possible to place them in a similar situation when placed in the ornamental or flower garden department. For the want of thus placing many native plants in their natural sites and locations, many persons have been discouraged from cultivating them. I have particularly noticed this misapplication in the Magnolia glauca by persons very desirous to cultivate it and who would be at some expense to arrive at the intended purpose. The plant has been taken from its native swamps and placed perhaps in a flower garden in an open dry situation where its sudden change rendered it almost impossible to survive and flourish to any perfection. Another error often occurs in the culture of native plants by cutting down their stems and leaving them bare in the flower garden in the winter. It must be recollected that nature has given to all plants and placed them in such situations, where they have a partial winter covering of leaves, stalks and the like, and as she should in this and every other case be as much as possible represented, I need not make any remark on the subject in this place.

(To be continued.)

### ART. IV.—On Laying out Gardens and Ornamental Plantations. By Edward Savers.

In reference to the many connected branches of horticulture, that of laying out gardens and ornamental plantations may be considered as highly interesting and useful to the possessor and the general observer: for it not only requires a certain knowledge of arranging the ground to be operated upon for the intended purpose, but also a correct estimate of the growth and the different port or habit of the several trees, shrubs and flowers to be planted; with a practical knowledge of their several uses and qualities, relative to the ornamental or domestic purposes to which they are to be applied; which should be in accordance with the plan and purpose of the proprietor, and meet the eye of every critical observer in the design, the arrangement and the distribution of the different trees and plants when completed.

In laying out gardens, the first consideration is the extent of the ground to be laid out; the taste and desire of the proprietor, and the probable sum to be expended on the improvement or making the grounds. Having obtained these prerequisites, a general estimate can then be made to meet the different objects of improvement, in a pretty accurate manner, by calculation; each separate improvement, as the expenses of houses, soil and levelling, trees, labor and the like, being added up in one sum total.

In proceeding on my subject, I shall not pretend to follow any particular mode that has been laid down as a correct theory in Landscape Gardening; but endeavor to hit on some method that appears the most natural, and combines real meaning with useful purposes, which I have always considered a grand principle in laying out and planting gardens; for when the thing is not adapted to the intended purpose, a deficiency will always be discovered by any intelligent person; as, for instance, to see a nursery laid out into ornamental figures, an impropriety is at once discovered, when it is well known that every thing should be found in almost alphabetical order; on the other hand, too much formality in the ornamental or flower garden is as inconsistent, where every possible variety should be given in the most pleasing and contrasted manner. The

same affinity may be discovered by any intelligent observer in every department relative to horticulture.

In forming the plan of the ornamental plantations or grounds to be laid out, one principal object to be kept in view, is that of an uniform proportion, in the walks, borders and the different appendages; by which I mean that no incongruity may appear to spoil the good effect intended to be represented. For instance, narrow walks on an extensive pleasure ground have a contracted appearance, while very wide walks on a small place are as inconsistent:—

Every thing should have a free, open appearance, that at once attracts the attention of the observer and conveys a real meaning.

In laying out grounds and ornamental gardens, many pleasing appendages may be very appropriately placed, to give a good effect, and appear to have a real meaning: as rustic arbors, ornamental seats, ornamental water, rockeries, and the like additional appendages, which, when properly placed and managed, give a finish to the grounds, and have the most pleasing effect, but when badly done, their absence is better than their presence; for, in such cases, they have the appearance of a feeble effort to accomplish the intended purpose of the design,-for instance, where a pond is made in such a location, that it is nearly all the summer dry; or a tumble-down bridge over a canal or stream of water; a rustic arbor exposed to the burning rays of the sun, finished in too much mechanical order, are incongruities altogether inconsistent to the purpose. A pond or sheet of water has a beautiful effect in low ground, where the observer at once discovers that a low, unsightly and unhealthy piece of ground has been converted into a useful and ornamental purpose; a well contrived bridge over a stream of water gives the same impression of improvement by a better communication from one part of the ground to the other, and a rustic arbor placed in a cool retreat is always admired by the visitor, after viewing the flower garden and ornamental grounds. It should be so placed that it is approached by a serpentine, or other well contrived walk, leading from the flower garden, and if possible a green sward or lawn around it, to give those who rest in it the appearance of retirement.

There is also some knowledge and art required in the planting of ornamental grounds and gardens, for if the plan or design is in every way the most adapted to the purpose, a mismanagement in the

planting will destroy the good effect intended to be given. There should be a corresponding harmony in the effect given on the whole premises ornamented or planted, with a boldness mixed with the appearance of lively variety. To effect this object, the planter must be well acquainted with the port or habit of trees, as relates to their different shades and colors of foliage, their form and height, and whether of a rapid growth or of a tardy progress. Indeed every part of the ground should be in the eye of the planter in a finished state before it is begun or some misapplication will be made.

By a little observation there will be discovered many improprieties in ornamental plantations, owing to a little want of foresight in planting; in some places heavy kinds of evergreens, as the Arbor vitæ, have the precedence, or other deciduous trees, &c. which, if judiciously mixed, would have a pleasing effect without so much formality.

(To be continued.)

### ART. V .- Cactus Triangularis.

MR BRECK—Dear Sir, I am indebted to the politeness of Mr Haggerson, gardener to J. P. Cushing, Esq., of Belmont Place, Watertown, Mass. for the opportunity of communicating to you a description of the Cactus Triangularis which I had the pleasure to see in flower, in the pine stove of that place on the evening of the 14th October. It is one of the most splendid varieties of the night-flowering cactus, and is rarely seen in flower out of a tropical climate, of which it is a native: and it is, very probable the first specimen ever flowered in this part of the union.

The flower-bud which was covered with a dark green imbricated calx, measured before its expansion, 18 inches in length, from the joint of the plant to its apex, and the top of the flower-cup when fully expanded measured eight inches in diameter, and the outside or extreme petals above a foot in diameter. The flower is similar to the C. grandiflora, or night-flowering; but in color it is different, in the petals which are a clear white and have a fine flake-like appearance, which are prettily contrasted by the yellow anthers in the centre that fold around the style which has the appearance of

highly polished white marble: in fragrance is not equal to the grandi flora; although for nobleness it may be said to be its superior; and indeed is one of the finest acquisitions to the stove.

From an account of this flower, given with a plate, in Curtis's Magazine for 1818, it appears to have been considered a very rare flower, as the specimen was sent in bud to the publisher, by a Mr Storrer, of Flower Park, near Henly-upon-Thames. The author says, "The first account we have of one of these plants flowering in Europe, is by Dr. Trew, in the ninth volume of the Actæ Naturæ Curiosorum; where there is an incorrect figure of one which flowered in the garden of the University of Altorf, in the Canton of Uri, in the year 1747; but it had flowered many years before in Germany, and about the same time at Vienna, in the garden of Prince Eugene. A better figure is given in the tenth volume of the same work. But the best representation of the flower, is by Dr Risler, from a plant, which had been many years in his father's stove, but at the time of its blossoming was in the possession of Syndic Hofer, of Mulhausen.

"In this country," he continues, "it first flowered at Hampton Court, and at the marquis of Rockingham's. In the former place it appears to have been cultivated seventy years before it produced any flowers, being in the collection there in 1690, and not having blossomed in England, according to Miller, in 1759."

"Perhaps," says the author, "the reason of its having been more shy of flowering here than on the Continent is, that the wetness of our summers have hardly admitted of the plants' being entirely exposed to the open air during the summer months; which Dr Risler recommends, and so all the flowering plants above mentioned, appear to have been treated."

It is most probable that the situation and treatment given to the plant flowered by Mr Haggerson, was in a great measure the cause of the plant under notice flowering, it being placed in the back shelf of the pine-stove, where it had free access to heat and air; the plant was also much cramped at root, being in a very small pot.

It is much to be hoped that so beautiful a class of plants will be better known than hitherto in culture, and find their way into many collections of plants.

E. S.

ART. VI.—Review of Clement Hoare's Practical Treatise on the Culture of the Grape Vine on open walls,—First American edition.

The above title is a reprint of a neatly printed work of 134 pages octavo. By Wm. D. Ticknor, Boston: and dedicated to the members of the Horticultural Society of Massachusetts, under the impression that a "perusal of it will indicate the causes of the general failure of our vines, and that a strict adherence to the severe discipline so clearly illustrated by the author, will restore the confidence of the horticulturists of Boston and its vicinity in the capacity of their climate, to mature, in the open air, some of the best varieties of foreign grapes."

In noticing the treatise under consideration, it will be proper to state that the work was written with a view to renew the culture of the foreign grape in open culture in the island of Great Britain; and the whole tenor of the writing is adapted to that climate; therefore, the sole object is altogether of a local nature, which should be the first impression of the reader, and borne in mind through the management in the different departments of the practical instructions laid down by the author. By close and attentive reading, it will be discovered that even, should the system prove altogether correct in theory and practice, that much attention will be requisite in the adapting of it to this climate; which, in many cases, is known to be quite different from the one the subject is intended to be practised in; under this impression I shall in my remarks keep in view the subject under the consideration of climate more than culture; for after a careful reading of the practice laid down by the author, I am decidedly of opinion with the intelligent horticulturist who has recommended the work,\* that "the general principles laid down by the author, although applied to the culture of the vine on open walls. are highly valuable as fundamental rules for the treatment of this plant in all situations, whether in door, or out on open walls, or upon trellises, in town or country."

The Author commences the book with an introduction of some length, in which he gives the class and order of the grape with its

<sup>\*</sup> Mr Brimmer's letter.

general character and habits, in a very clear manner, relative to its native country, with an historical sketch of the high estimation it has been held in at so early a date as before the Christian era: the vine is then traced in its culture in Great Britain before that period, and it is proved by history that the vine was cultivated to a good effect in that country for a "long series of ages." After regretting the failure of the grape in Great Britain, the author points out a system in which the culture may be renovated to a very profitable purpose under the method about to be spoken off, by which every square foot of wall may be made to bear a pound weight of fine grapes, (p. 17.) and furthermore adds, "with reference to the importance of the culture of the vine, as affording a most valuable and highly esteemed fruit, it deserves especial remark, that for making wine, not only are ripened grapes applicable to that purpose, but from the leaves, tendrils, and young shoots of vines, and also from unripe or immature grapes, very fine wine may be made, differing in no respect from many sorts of wines imported from abroad."

The introduction closes with reference to a chemical examination on the subject, (p. 17.) quoted from "Dr. Macculloch's Remarks on the Art of making Wine;" with a confidence if the principles of the practice laid down are followed, that the vine may be made to bear a produce to fully recompense the cultivator in the most sa-Having such inducements pointed out as entisfactory manner. couraging to the culture of the grape, the next thing in consideration is, to make ourselves carefully acquainted with the method of culture as relates to the different times of pruning, soil, location, temperature, diseases, and the like, under the consideration of the writer, where the subject is intended to be put in operation, and then note the time and locations in comparison with that of this country, when something like an estimate may be made if the same results may be expected from the same practice, if strictly followed; or whether any amendment or adaptation can be entered into, to grow foreign grapes by out doors culture to good advantage, which can only be proved after a satisfactory trial has been given in the most careful manner.

In proceeding to the culture of the grape, I shall follow the author's ideas regularly through the Treatise, and give some remarks on their probable good or bad effects if followed, at the conclusion.

The second chapter commences with some capital remarks on

the mismanagement of pruning grapes, and the results therefrom. The subject of pruning is practically handled, and the most general errors of mismanagement and failure of crops of grapes assigned to the characteristic of the grape being but little known. "The grand parent error," says the writer, "which prevails universally in the cultivation of the vine on walls, lies in the method of pruning usually adopted, and this is undoubtedly the consequence of the nature of the plant, and its peculiar characteristics being in general little understood. The immense quantity of wood which a vine annually produces, and the force with which its sap flows, causing its most vigorous shoots to be formed at the extremities, render it necessary, in order to keep the plant in good bearing condition, and its branches within reasonable distance of its stem, that the pruning-knife should be used to a far greater extent than is ever practised on any other description of fruit whatever. The most severe manner indeed, in which that instrument is at any time applied to other trees, is as nothing when compared with that required for the vine. Some just remarks are made on exhausting the vital energies of the vine by leaving too much wood, and leaving too much fruit on the vine, especially before its nature is sufficiently robust to mature the fruit without weakening it in such a manner as to retard its future growth: the chapter closes with some excellent remarks on pruning and over-bearing of vines, which are worth the price of the book to any person engaged in, and unacquainted with the culture of the grape.

The third chapter is an excellent comment "On the capability and extent of the fruit-bearing powers of the vine," in which the writer comments on the ill consequences arising from the over-croping of vines. "In very warm summers," says the writer, "the juices of a vine-plant are more highly elaborated than usual, the sap being inspissated or thickened, in a greater degree by the increase of solar heat, in consequence of which, it is rendered more productive of flower-buds than leaf-buds." He then states, "In the following year, almost every vine, however injudiciously managed will be seen loaded with fruit, and the year is then called "a grape year." In consideration that most persons leave all the bunches on such vines, the author very properly condemns the mode as a sure case of exhausting the vine, and causing the fruit to ripen prematurely; the subject is continued by the result of his experiment on

the probable quantity of fruit a vine is capable of bearing when of a certain girth of the main stem; and a table of his experiment is appended, which will be found a useful criterion in all cases of grape-growing.

In the following chapter the aspect best adapted to the grape is pointed out with the advantage of a sheltered situation, as the writer points out that warmth alone is not the only requisite, but that protection from winds is also indispensably necessary, and states that, "There is no period in the growth of the vine," that the wind will not have a greater or less pernicious effect on the well being of the vine, the aspect selected is that of a south-east or due south, which will most probably be found to answer the best location for the grape in this country in any situation or manner of culture.

The next subjects spoken of are the soil, compost, and borders; every kind of manure is recommended that is generally used, as sweepings of streets, blood, bones, horns, the hoofs of cattle, cuttings of leather, woollen rags, feathers, &c. &c. In this part of the Treatise I think the writer is rather diffuse in his notions and likely to bewilder any young beginner into an expensive and useless trouble in collecting so many materials. So far as relates to the use of bones, there is no doubt but they are a fine nutriment (particularly when ground or crushed) to the grape or any other fruit or vegetable; but as regards the different sizes it is altogether a subject of little importance. A border, dug two feet and a half deep, on a moderate dry bottom, filled with a compost from the top sod of a loamy pasture, well incorporated with rotten manure, either of horse, cow, or other animal, will grow grape vines sufficiently strong to produce grapes if the climate will admit, either in doors or out, and if bone dust can be mixed therewith the better. Blood, soapsuds, night-soil, or any such nutriments in a liquid form, mixed and incorporated with compost, will be found to be proper in almost any grape borders. As regards the compost recommended for the border. I am of an opinion that it will not in every degree be found to answer in this climate, for the many dry materials recommended on so shallow a depth for the border, will be the cause of draining it to complete dust in the summer season in this climate, at a time when the vines will require the most support from the earth into which they are grown. AMATEUR.

(To be continued.)

# ART. VII.—Plants Recently Figured and Described in Foreign Works.

Rhododendron phæniceum; var. splendens. (Splendid Rose bay.) Linnean Class and Order, Decandria Monogynia. Natural. Order. Ericaceæ. Trib. 2. Rhodoreæ.-A dwarf, branching shrub, about 3 feet high. Branches spreading, filiform, thickly clothed with appressed, scaly bristles. Leaves, lanceolate, mucronulate, stalked, attenuated towards the base, an inch and a half or two inches long, and half an inch in width, dark green above, paler beneath, sparingly clothed on both sides with recumbent, bristly hairs. Petioles about a nail long, channelled above, thickly beset with appressed, scaly bristles. Flowers terminal in pairs. Bractes squamiform, ovate-lanceolate, acuminate, concave, bristly, brown, and scariose, caducous. Peduncles scarcely half an inch long, thickly clothed, as well as the calyx, with appressed, silvery, scaly bristles. Calyx 5-partite, the segments lanceolate, acute, equal, leafy, green. Corolla widely campanulate, of a rich reddish purple; tube very short, turbinate; limb spreading, deeply 5-lobed; lobes oblong, rounded, entire, wavy at the margins; the 2 upper ones marked with deeper colored spots. Stamens 5 or 8, unequal, declinate. Filaments purple, compressed, slender, bearded below. Anthers very short, dark-purple, opening by two terminal pores, and apparently without pollen. Ovarium ovate, copiously bristly. Style slender, 5-angular, glabrous, purple, declinate, thickened above. Stigma large, capitate, projecting beyond the corolla, slightly 2lobed.

We are indebted to Mr Stidolph, Gardener to Mr Baily, at Peckham Rye, for an opportunity of presenting our readers with a figure of this very showy variety, which he informs us was raised by Mr Wood, gardener to Mrs May, at Sydenham, from a plant of Rhododendron phæniceum, that had been fecundated by R. catawbiense. It is as Mr Stidolph justly observes, a splendid variety. From the circumstance of its producing its blossoms freely and in abundance, and from their size and color, the plant will prove a valuable addition to the ornaments of the conservatory, during the early spring months.

It will require the same treatment as the other kinds related to  $R.\ indicum$ , and it may be increased by cuttings or by layers.

Enothera bifrons. (Heart-leaved Enothera.) Linnean Class and Order, Octandria Monogynia. Natural Order, Onigrariæ. Trib. 3. Onagreæ.-Root biennial. Stem 2 feet high, cylindrical, sparingly furnished with spreading white hairs. Leaves, the lower ones oblong, upper ones amplexicaul, cordate, acute, finely toothed, pubescent, an inch long. Calyx sparingly furnished with spreading bristly hairs; tube nearly equal throughout, filiform, an inch and a half long; limb shorter than the tube, the segments linear-lanceolate, mucronate, reflexed, membranous, pale yellowish-green, occasionally stained with purple, and often combined in pairs. Petals obovate, obtuse, sulphur colored, slightly crumpled and crenulate at the upper margin, about the length of the calyx. Stamens nearly as long as the petals. Filaments nearly equal, slender, filiform, glabrous, four times longer than the anthers. Pollen large, triangular. Ovarium cylindrical, with four depressed, bristly angles. Style filiform, glabrous. Stigma annulate, with four cylindrical, blunt, radiating lobes.

This which we believe to be an entirely new species was raised by Mr Miller, from seeds collected in Texas by the late Mr Drummond. Our specimens were communicated from the Bristol Nursery in September last. The plant is biennial, and is of easy culture, growing and ripening its seeds freely in the open border.

The species comes near to biennis, but its cordate leaves, crumpled petals, and hispid fruit readily distinguish it.

Class and Order, Tetradynamia Siliquosa. Natural Order, Cruciferæ.—Root fibrous, annual. Stem cylindrical decumbent, branched, about a foot high, sparingly clothed, like the rest of the plant, with short forked hairs. Branches filiform, fragile. Leaves linear, obtuse, slightly hoary, sinuately toothed, or pinnatified, with blunt teeth, an inch or two in length, attenuated at the base. Flowers terminal, racemose, white, fragrant. Bractes linear, entire, recurved. Pedicels shorter than the bractes, canescent. Sepals oblong, green, canescent. Petals 4, white, with narrow, linear channelled claws; lamina as long as the claws, pinnatified with linear, blunt segments. Stamens 6, about equal. Filaments white, filiform, simple, glabrous. Anthers linear, obtuse, incumbent, yellow, nearly half as long as the filament; cells parallel, free at the base. Ova-

rium cylindrical, densely pubescent. Stigma large, capitate, sessile. Disk annular, with four green pointed teeth.

This remarkable plant is a native of Chile, whence it was originally introduced by the late Mr Walker, in 1821, as recorded in the Botanical Magazine. It is a hardy annual, thriving best in a light sandy soil, and is increased by seeds, which it however perfects but sparingly, and that only in dry and warm summers. To hasten their growth, and thereby insure the maturing of seeds, the young plants should be raised in a frame, and planted out in a sunny border about the middle of May.

The flowers are very fragrant, especially in the evening; their odor resembling that of the Mathiola tristis.

The curious characters of the divided petals and cotyledons, separate the genus from the rest of the *Cruciferæ*, of whom it constitutes a singularly interesting group.

The generic name alludes to the divided petals, and is compounded of schizo to cut, and petalon a petal.

Sisyrinchium grandiflorum. (Large flowered Sisyrinchium). Linnean Class and Order, Monadelphia Triandria. Natural Order, Irideæ. The whole herbage of a dull glaucous green.-Rhizoma short, truncate, throwing out numerous white fibres. Scapes a span high, cylindrical, hollow, deeply furrowed, and somewhat spirally convolute, furnished at the base with a few imperfectly developed leaves. Leaves cylindrical, hollow, furrowed and rather acute, the length of the scapes. Spathes diphyllous, many-flowered, an inch and a half long; leaves unequal, linear-lanceolate, obtuse, cucullate, folded, with the edges smooth, white, and scariose; partial ones inclosed, scariosely membranous. Peduncles slender, capillary, glabrous, shorter than the spathes. Perianthium deeply 6-partite, spreading, of a rich purple, the segments obcordate, nearly an inch long, marked with five conspicuous, deeper-colored nerves. Stamens 3, monadelphous, shorter than, and opposite the three outer segments of the perianthium. Filaments glabrous, purple, connate below, upper half free and white. Anthers linear-oblong, obtuse, emarginate, incumbent, orange, extorse, finally becoming spirally twisted, composed of two, parallel, prominent cells, connected by a linear, white connectivum, free as the base. Ovarium turbinately 3-sided, 3-locular, each cell having many ovules. Style slender, glabrous, purple, about as long as the perianthium. Stigmas 3, short, simple, recurved, truncate, and minutely papillose at the apexThis interesting addition to our hardy border flowers, formed part of the rich harvest of vegetable treasures obtained by the late Mr Douglas during his first visit to the North-west regions of the American continent, the plant having been discovered by him near the great falls of the Columbia river.

It far surpasses all the other species of the genus, in the size and rich coloring of its flowers. The plant is perennial, and is readily multiplied by division or by seeds. The soil best suited to it will be found to be a mixture of peat and loam.

The generic name was used by Theophrastus, to designate a plant of the same natural family, supposed by Sibthorp, and other eminent authorities, to have been identical with the *Iris Sisyrinchium* of modern authors. The name originated from the circumstance of pigs being fond of the roots of the plant, and is compounded of *sus* a pig, and *runchos* a snout.

Siphocampylus bicolor—(Two-colored Siphocampilus.) Linnean Class and Order, Pentandria Monogynia. Natural Order, Lobeliaceæ. Plant perennial, suffruticose. Stems erect, rather feeble, branched, about 3 feet high. Branches slightly angular, finely pubescent, especially towards the apex. Leaves distantly alternate, petiolate, lanceolate, acuminate, even and membranous, finely and unequally serrated, with pointed teeth, attenuated at the base, 3 inches long, bright green above, rather paler and glabrous beneath, the younger ones slightly pubescent, especially on their upper surface. Petioles very short, being scarcely more than two lines long, semicylindrical, channelled above. Flowers axillary, solitary, pedunculate. Peduncles slender, filiform, pubescent, shorter than the leaves, and furnished about the middle with two small, alternate, lanceolate, acuminate, appressed, ciliated bracteolæ. Calyx the tube hemispherical, pubescent, green; teeth 5, short, lanceolate, acute, ciliated, erect, equal, the edges slightly recurved. Corolla more than an inch long, slightly recurved; tube cylindrical, scarlet, entire, but ultimately splitting along the upper side; limb bilabiate, yellow, of five, linear-lanceolate, acute, nearly equal segments. Stamens 5, monadelphous. Filaments cohering, membranous, yellow, pubescent, especially at the margins. Anthers cohering into a tube, paler yellow, composed of two parallel cells, united by a linear connectivum, each terminated by a tuft of white straight hairs.

We are indebted to Messrs Low and Co. for the opportunity of

giving a figure of this very showy species of Siphocampylus, which they raised from seeds collected in Georgia, United States, by Mr Alexander Gordon, a zealous botanical collector, to whom our gardens are already indebted for the introduction of the elegant Gardoquia Hookeri.

Mr John Henchman informs us that the present species is perfectly hardy, growing vigorously and producing abundance of its beautiful scarlet and yellow flowers in the open air; the plant will no doubt be very readily multiplied by cuttings.

The present group is a very natural one, and was established, as a distinct genus by Pohl in his *Icones Plantarum Braziliensium*. The species now before us is the most northerly in its geographical range, the greater part of the genus, which includes 42 species, being mostly confined to tropical America.

The name alludes to the curved tube of the corolla, and is compounded of siphon, a tube, and kampulos, curved.

Spartium junceum; var. odoratissimum—(Fragrant Broom.) Linnean Class and Order, Diadelphia Decandria. Natural Order, Leguminosæ. A spreading, branching shrub, of 3 or 4 feet high, with long, filiform, rush-like, green branches; the younger ones silky. Leaves sparingly scattered, stalked, lanceolate, acute, even, an inch long, silky beneath. Racemes terminal, solitary, short, many-flowered. Flowers of a pure yellow, very fragrant, and rather smaller than those of var. a. Calyx tubular, spathaceous, striated, glabrous, with an oblique scariose limb, furnished beneath with five short, rather blunt teeth. Corolla glabrous, thrice longer than the calvx. Vexillum ovate, acuminate. Wings oblong, acute, shorter than the keel, connivent, with an oblong callosity on the upper side at the base. Keel, the petals slightly cohering, lanceolate, acuminate, rather falcate, furnished near the base with a hollow pit, and rounded at the upper side, the lower edge downy. Stamens 10, monadelphous. Filaments glabrous, greenish white. Anthers pale brown, linear, of two parallel cells, bearded at the base. Ovarium compressed, silky. Style nearly cylindrical, pale green, glabrous. Stigma oblong, unilateral.

This variety is distinguished by its more slender and spreading habit, more silky leaves and shoots, and lastly, by its smaller and more fragrant flowers. The plant was, we believe, first raised by

the Rev. Mr Duke of Lake House, near Salisbury, from seeds stated to have come from Persia.

It is equally hardy with the common variety, and the flowers are still more fragrant.

The generic name is is derived from the Greek sparton, which signifies cordage, and alludes to the use to which the ancients applied their Spartium.

Verbena Tweedieana; (Mr Tweedie's Vervain.) Linnean Class and Order, Didynamia Angiospermia. Natural Order, Verbenaceæ. Verbena. Stems erect, suffruticose, from a span to a foot high, copiously clothed, like the rest of the plant, with soft glandular pubescence. Leaves opposite, stalked, ovate-lanceolate, acuminate, soft and membranous, deeply and unequally serrated, two inches long, the base cuneate and entire. Flowers in a short capitate spike. Peduncle three or four inches long. Bractes solitary, ovatelanceolate, acuminate, entire, about half as long as the calyx. Calyx tubular, 5-angular, teeth erect, subulate. Corolla salvershaped; tube cylindrical, pale yellow, glandular, bearded within, twice longer than the calyx; limb spreading, 5-partite, of a rich crimson; segments cuneate, deeply notched, the anterior one rather larger. Stamens four, inserted in the mouth of the tube, pale yellow. Ovarium glabrous. Style inclosed, glabrous, dilated, and compressed laterally at the apex, the sides prolonged into two unequal teeth between which is seated the gland-like stigma.

This lovely species of *Verbena* is nearly related to *V. chamædrifolia*, and is chiefly distinguished by its taller and upright stems, softer leaves, shorter capitate spikes, and larger flowers of a rich crimson. It promises to be quite as hardy as that species, and will prove an equally brilliant ornament to the flower border.

Raised from seeds collected at Laguna de la Molina in the Banda Oriental by Mr Tweedie. The plant grows likewise in the province of Rio Grande do Sul, where it appears to have been originally discovered by the late Mr Sello, in whose collections we have seen native specimens. It was found by Mr Tweedie growing in boggy places, the knowledge of which fact will materially assist in its culture.

Thunbergia alata, var. alba; (White-flowered, winged-petioled Thunbergia.) Linnean Class and Order, Didynamia Angiospermia. Natural Order, Acanthaceæ. Thunbergia. Stems herba-

ceous, twining, quadrangular, copiously clothed, like the rest of the plant, with short, soft, spreading hairs. Leaves cordate-sagittate, 5-nerved, membranous, downy beneath, two or three inches long the margin repandly toothed, or more rarely entire. Petioles an inch or two inches long, linear, winged, with a leafy slightly wavy border. Peduncles axillary, solitary, one-flowered, nearly filiform, scarcely longer than the petioles. Bractes two, ovate, mucronulate 9-nerved, entire, winged at the base behind. Calyx very short, cup-shaped, green, with twelve subulate, erect, unequal teeth. Corolla funnel-shaped; tube curved, dilated upward, and together with the faux of a dark purple, approaching to black, and clothed within with papillose pubescence; limb oblique, pure white, divided into five, rounded-cuneiform, entire, nearly equal lobes. Stamens four, didynamous, inclosed. Filaments subulate, nearly glabrous, pale purple. Anthers pale yellow, bilocular, fringed with white papillose hairs, the cells spurred at the base. Ovarium bilocular, surrounded at the base by a yellow, fleshy, lobed ring. Style slender, filiform, glabrous, white. Stigma bilabiate, the lobes truncate, cucullate, the anterior one declinate.

This very showy variety is generally supposed to be a hybrid production between T. alata and fragrans, but there is no ground for this supposition, nor can there be any question that the plant is anything more than a mere variety of T. alata, differing in no respect except color. The plant is highly ornamental, and being easily multiplied by cuttings, it has already become common. Like the other variety it is often treated as a stove plant, but it succeeds better in the conservatory or greenhouse, and if planted in a warm sunny border, it will grow and blossom freely during the summer months. A soil composed of peat and loam is that which suits it best.

The genus was dedicated by the younger Linnæus to his friend and successor Thunberg, an indefatigable botanical traveller, and author of the *Flora Japonica*, and a variety of other works on botany and zoology.—*British Flower Garden*.

#### ART. VIII .- Plums.

THE common wild Plum, furnishes the best of stocks, for the propagation of the choice varieties. It is hardy and free from most diseases. As its growth is slow, it somewhat dwarfs the grafts of the finer kinds, that are naturally more luxuriant. This tends not only to render them more fruitful, but to prevent the fruit from rotting before it comes to full maturity.

The grafts will, in a few years, out-grow the stocks, but the wood of the latter is so tough, that I have never known them to break off, after the wound from the operation of engrafting, was entirely healed. Every neighborhood at the West, abounds with the wild plum. The thriftiest trees, from an inch to an inch and a half in diameter, should be selected and transplanted in autumn to the places where it is intended they shall remain. Care should be taken to preserve every root if possible; the tops should be thinned out, but no large limbs should be amputated. The hole to receive the roots should be at least three feet in diameter, and eighteen inches deep; this should be filled with the richest earth, but not with manure. They require a rich soil, and it is best to cover the surface for a few feet around the tree, with compost, tanners' pates, lime and bark, horn-tips, bones, coal-ashes, or any other articles that will keep the ground loose, moist and rich.

When the trees have entirely recovered from the shock of transplanting, engraft them, and not before. It will require at least two years for them to get over it.

In performing the operation of engrafting, saw off the main stock or the leading branches, as the size of the tree may require; where they are not over an inch or an inch and a half in diameter, pare off the surface off the stock with a sharp knife, split it down two inches through the center with a thin butcher knife or other convenient instrument, and then keep open the split by driving in a polished iron wedge, which every farmer should keep for the purpose. A shoulder should then be cut on each side of the graft, two inches from the lower end; and from these shoulders, it should be gradually sloped off by a clean cut, so as to form a wedge that will exactly fit the cleft, in the stock. Next insert the graft into the stock so that the inner barks of the two will be parallel to each other. In

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this manner, a great extent of surface comes in contact between them, not only on the whole length of the wedge, but between the shoulders of the graft and the top of the stock; and the graft is at once supplied with a full flow of sap. This is not the case with those set by the transient engrafters that infest our country every spring, who insert their grafts obliquely to the stocks, and leave them to half starve, if we may use the expression, for the want of support. In one instance, the grafts will grow from three to six feet; in the other, not as many inches.

The next process is to protect them from the air and weather. This is best done by carefully surrounding the top of the stocks with grafting cement (resin 73 parts, beeswax 17, and tallow 10,) warmed to the right consistency. Over this place a thick coat of well worked clay, and confine the whole by surrounding it with some pliable cloth and tying it on with pack-thread; the cloth should be about eight inches square, and should be perforated with two small holes near its centre, at a suitable distance apart, for the grafts to pass through when it is placed over the top of the stock. Two grafts should always be inserted—if both live, one can be shortened from time to time, so as to finally give the nourishment to one. In this method the wound heals better than if only one is inserted.

If cement alone be used, it will often destroy the grafts in our hot summers at the west. Clay without cement does not sufficiently exclude the air and wet; combined they act to the best advantage. When tow is employed in place of cloth, birds are apt to strip it off, for furnishing their nests. This, however, can be remedied by coating it over with thin mud.

Plum trees should, if possible, be set where swine can have free access to them. The curculio insect that stings the fruit will be in a great measure exterminated on a country farm, if swine can have an opportunity to eat up the premature droppings. When this cannot be done, the method of shaking the tree, with sheets placed under it at the time the insects are performing the operation, will succeed, as I have tested fully, for a number of years.

Old and exhausted varieties are not worth cultivating. Much care should be used to select those that are young, healthy and fruitful.—Ohio Farmer.

### ART. IX .- Blight in Pear Trees.

SEVERAL competitors have already appeared for the five hundred dollars Philadelphia premium, for a preventive in the blight in the pear tree. Two of the communications have appeared in the Farmer's Cabinet; one from N. H. Watkins, of Prince Edward, Va, and the other from T. Emory, of Poplar Grove, Md.

Mr Watkins, ascribes the blight to plethory, or too great a flow of sap, caused by pruning and ploughing; and the preventive he suggests, the utility of which he considers he has fully verified, is neither to prune, nor plough among the trees, after they have become well established in growth. He recommends that manure, if the land is poor, and the trees require it, be applied to the surface; and thinks ashes constitute a good dressing.

Mr Emory is of opinion, "that the cause of blight and destruction in the pear and apple tree, is almost always what the French term coup de soliel, (stroke of the sun;") and to avoid the stroke of the sun, he recommends that the trees be planted in a moist, but not wet soil, so as to be sheltered on the south-west by "tall, dense forest trees, or a house or hill."

We notice these communications, not because we think that either assigns the true cause of the blight, or recommends an efficient remedy or preventive; but rather to point out their fallacy.

The blight is not confined to the apple and pear, but extends to many species of the natural order of Pomaceæ, as the quince, service, &c. and appears and disappears at intervals of some years; and hence we infer, that it is not caused by a stroke of the sun, nor abundant flow of sap. These causes are continually operating; and if they produce blight in one season, they would produce it any season, and these trees would long since have been extinct among us. Both of these theories are contradicted by the well known laws of vegetable physiology. But we are not left to conjecture upon this subject. It has been satisfactorily shown, that the blight is owing to an insect, which is described and figured in the memoirs of the Massachusetts Agricultural Society. The first appearance of the blight, that we have noticed on record, was in 1780. We hear nothing further of it until about 1802, when we witnessed its effects during that and four or five subsequent years. It appeared

in our grounds again in 1824 to 1828—since which it has scarcely been noticed, though it may have appeared in other sections of the country. During its last visitation, we lost perhaps, a hundred pear trees, some apple trees, and most of our quince bushes. Of the pears, some grew in dry, and some in moist ground; some in ploughed, some in grass ground, and some in lanes where the ground was trod hard. The blight affected all alike. The only remedy that we thought beneficial, was promptly to cut off and burn all the diseased branches, taking care to cut below the discolored bark and cambium.—Cultivator.

#### ART. X .- Miscellaneous Articles.

RADIATION OF HEAT .- The present season has afforded some striking illustrations of the manner in which this operation of nature is conducted, and on which early frosts are so much depending. In the frost of the fifth of August, the air was perfectly clear, and though the thermometer did not sink below 38°, ice formed on the water, and vegetation received a severe check. On the night of the third inst. the heavens were covered with thick clouds, yet though the wind as before was directly in the north, and the thermometer in the same situation sunk to 28°, still no ice was formed near the ground, until after daylight, when the clouds passed away leaving the sky clear, and vessels of water standing on the ground were soon covered with ice and remained so through the day, the air cloudless, and the thermometer rising to 37°. In this case, the clouds, it is clear intercepted the radiated heat, and returned so much of it to the earth's surface that the temperature there remained at least ten degrees higher than it was a few feet from that surface, until they passed off and left the radiation free, when the usual result followed, and ice formed at once. During the night the leaves of the cherry and other trees were frozen hard, but tender plants such as clover, peppers, &c. were untouched when close to the earth. This result shows that when frosts are apprehended early in the season, plants, such as cucumbers, melons, &c. may be preserved by spreading over them any substance, no matter how thin, that shall intercept the radiated heat, while it does not actually touch the plants themselves. - Genesee Farmer.

The Patriarch of Pumpkins.—Not only has the land of the Pilgrims and thanksgiving pies, been thrown an immeasurable distance into the back ground, but even we of the Empire state must "knock under" to her named the "Keystone," in the production of that molasses-making, and pie-engendering esculent, the pumpkin. We have beat her in our wheat-fields, in our productive oats, in our mammoth strawberries, but when has New York produced such a pumpkin as the one described below; we must recollect however that Pennsylvania is the land of "Monsters."

The Horticultural exhibition at Philadelphia on the 20th and 21st of September, must have been a magnificent affair; and the show of fruits, and flowers, and esculents, such as would fully justify the laudatory paragraphs of that city of brotherly love. Among the other beautiful, delicious, and magnificent productions of nature there exhibited, might be seen in its yellow prime the pumpkin thus described by Mr Chandler of the U. S. Gazette. "The fruits were in the northen saloon of the Masonic Hall, on entering which, the first object that arrested our attention was a pumpkin, raised by John Wetherell, Esq. of Chalkey Hall, near Frankford. It weighed two hundred and thirtyeight pounds, and measured eight feet six inches in diameter. Think of that ye who were born north of the Hudson, and talked of nation great pumpkins that weighed forty pounds:-think of that ye yankee women that hunt two hours for three pumpkins exactly alike, so as not to spoil the pies. It is well that a garden of such pumpkins (and Mr Wetherell has many nearly as large) is situated in the centre of the nation—at the extremity they would endanger the Union-the States would upset."

There were other things well deserving of notice in the splendid saloons of the Hall devoted to the exhibition. Magnificent trees with their spreading branches and sweet singing birds, the trees made of intertwining dahlias and their variegated flowers; a representation of the U. S. Bank with its porticoes and columns from the same material; fruits, the enticing fragrance of which could not lead the nose astray; bunches of grapes, which in size and flavor would not have dishonored the vale of Eshcol; boxes of glass filled with pure and new made honey; flowers of wax that vied with those of nature; and numerous specimens of the more humble, but not less useful, tenants of the culinary department of horticulture. We are always pleased to notice such agricultural and horticultural exhibitions. They are a kind of neutral ground, on which men of

opposing interests, or clashing political views, may meet, and forget the bitterness so prone to be engendered by the every day workings of conflicting opinions, or selfish claims. By learning to love nature, we learn to think better of our fellow-creatures; and the man who loves to listen to those "living preachers," mute and voiceless, the sweet flowers—who sometimes worships,

"Not in the dome where crumbling arch and column
Attest the feebleness of mortal hand;
But in that fane, most catholic and solemn,
Which God has planned;"—

will find his heart insensibly softened and refined by the purifying and elevating influences of that religion, taught by the Creator himself from the delightful volume of nature.—Genesee Farmer.

Preserving the Morus Multicaulis.—In reply to repeated inquiries how to preserve the Morus multicaulis through the winter, when taken up, we give the following methods, which have been practised with success. They may be kept in good order by taking them up soon after the frost has taken off the leaves, and burying them in a hole, something like that used for potatoes—mix the earth intimately with the trees, and use no straw, or the mice may harbor among and destroy them. Some have left the trees in the field, in a heap, covered with earth, where they kept finely. Freezing does not injure them, so long as they are completely covered with earth. Others have kept them in the cellar, in the same manner, or in boxes, mixed with sand, which is the best way to keep cuttings taken off in the fall.—Silk Culturist.

On Destroying the insects which infest Fruit Trees.—
It is of the utmost importance to the success and general well being of all fruit trees, that they be kept perfectly clear from all insects, parasites of all sorts, and all extraneous matters. Winter is the best season in which to operate for effecting this object; and, with regard to fruit trees trained against walls, we ought to commence by loosening all of them from the wall, and giving them regular and judicious pruning. After this, begin upon the main stem, even below the surface of the earth, by removing a portion of the soil, and diligently scrape or pare, if the case be such as to require it, every part, even to the extremity of each branch. Afterwards wash the whole of the wall most completely with the following pre-

paration: Take strong lime-water, after it has settled into a perfectly clear state, (so that none of the lime remains, farther than what it holds in solution), and mix in it about a fourth part of strong tobacco liquor; some soft soap, 1 lb. to a gallon; and about 1 lb. of flour of brimstone, or of sulphur vivum, either will answer: if some black pepper, ground very fine, be added, it will be an improvement. This preparation will clear the wall most completely from every kind of insect. After the trees are again dry, have a mixture ready, composed of the above ingredients, but in stronger proportions; and, instead of the lime water, use chamber lye, or the strong drainage of a farm-yard; and, lastly, thicken it to the consistency of good thick paint, with quicklime dissolved in it. Take painter's brushes of different sizes, and coat the trees completely over with the mixture, not leaving a chink or the axil of a bud, without working the mixture well into it. Use the whitest lime you can get for the purpose, that when dry you may readily see where the brush has missed. It is best to coat every part completely over two or three times, and it will kill every thing that is not concealed in the bark. In pear trees, the insects of the last class are our greatest pest. I wish some one would be kind enough to inform us how to get rid of the warty pest, which does not, I believe, commit its greatest ravages in that state. Will Rusticus of Godalming be so kind as to give us the history of this destructive insect? I think we have no enemy so resistless as this; all others fall beneath the above dressing .- Louisburg Alleghanian.

Packing Grapes.—The following is the mode of packing grapes which I adopted with success for many years, having to send them nearly three hundred miles. A box having been prepared, a bed of clean wool well separated, was laid in the bottom, on which a layer of grapes was placed, each bunch being separately enveloped in tissue paper. A portion of wool was then introduced between each bunch, and all the interstices filled with it, and then a layer of wool put over the top. For a second layer, a small ledge of wood was fixed at each end of the box at the level wanted, and a thin board made to fit in easily, so as to fall down upon the ledges; in the board there were two finger-holes made with an inch centre bit; and the board, being fixed down upon the ledges with a couple of small brads at each end, driven in half-way. A second layer of

grapes was laid in as above, and so on for a third layer, if wanted. The finger-holes I found very convenient for getting out the board, after drawing the small brads with a pair of pincers. In cases where wool is an object or it may be thought too expensive, moss well dried, cleaned and threshed, will be found a tolerably good substitute; but the superior elasticity of the wool renders it preferable.

—Loudon's Mag.

WITHERED LEAVES ON TREES.—J. D. in the Gardener's Magazine, observes, "It is stated that in Normandy, children go about with lighted torches of rye straw, for the purpose of burning the lichens, mosses, and dead leaves on the apple trees. Without offering an opinion on the merits of any mode for removing the persisting dead leaves, it may be safely remarked, that to remove them is most judicious and desirable. When leaves, which should fall in autumn, remain, though dead, through the winter on fruit and other trees, such dead leaves, on examination, will commonly be found to be but the envelopes of so many clusters of eggs, or pupæ of insects, which the sunshine of spring will excite to life and voracity just at the time that the expanding leaves of the trees have become eligible food for their sustenance."

FRUIT LADDER.—The following simple and useful ladder, for gathering fruit has been recommended to us by a correspondent in Maine. It consists of two upright posts, from 7 to 10 feet long, (more or less, at the option of the constructor,) inclining towards each other, about four feet apart at the bottom, and one foot at the top. The rounds of the ladder pass through the posts, and are about a foot apart. They are made somewhat larger in the middle than at the places where they are inserted into the posts, to give greater strength to the machine. A third post is added to these, through which the top round of the ladder passes, permitting the post last mentioned to turn thereon, so that its lower end may be set at a greater or less distance from the other two posts, or rather from a straight line drawn between them. This ladder may be made light and portable, and possesses the advantage of supporting itself without leaning on any other object.

PRESERVING POTATOES.—A good way of preserving sweet potatoes is when they are dug pack them up in dry sand, being careful

to keep them covered so as not to get wet. In this way they will remain all winter as fresh and as good as when first dug. A highly respectable farmer, the quality of whose potatoes I myself tested last spring and found them of the first cut, assured me that this was the method he had practised for a number of years, and found it perfectly successful.—Ohio Farmer's Reporter.

PLANTING FOREST TREES.—The best time for planting acorns, walnuts, as well as peaches, cherries, and other stone fruits, is in the fall of the year, as soon as they are ripe. If they are kept long after becoming thoroughly ripe, they are apt to lose their vegetative principle.

CANKER WORM.—A gentleman states, that in Plymouth, Massachusetts, they preserve fruit trees against canker worms, by the following mixture, used as a substitute for tar. White varnish, soft soap and whale oil, one third of each mixed and applied as tar is usually. This mixture is not soon hardened by the weather, and does not injure the trees. Another simple mode of preventing the ascent of the insects, is to wind a band of refuse flax, or swingle tow round the trunk of the tree, and stick on the band burdock or chesnut burrs, so thick that worms cannot pass between them.

ELDERBERRY SYRUP.—Take of the juice of Elderberry one quart; boil it to one pint; strain and add two pounds of double refined sugar; again place it over the fire; so soon as it shall have boiled remove it from the fire, and when cold bottle it for use, taking care to have it well covered. With a less quantity of sugar there will be danger of its becoming mouldy. As a gentle purgative, this syrup is an excellent medicine, of very pleasant taste, and is peculiarly serviceable to children who are not easily induced to take common medicine. The dose for an adult is a wine-glass full.

Balm blossoms, steeped in water, color a pretty rose color. This answers very well for the linings of children's bonnets, for ribbons, &c. It fades in the course of one season, but it is very little trouble to re-color with it. It merely requires to be steeped and strained. Perhaps a small piece of alum might serve to set the color, in some degree, in earthen or tin.

RHODODENDRON ARBOREUM.—There is now in the conservatory at Chatsworth a fine plant of the above species, which has upwards of two hundred branches of flowers upon it. It is almost impossible to convey an accurate idea of an object so magnificent as that plant, which is about eighteen feet high, covered with rich scarlet blossoms. The proper management of this species has long been an object of the cultivator's care; it is often found well grown, but rarely, if ever, seen in anything like the perfection of the present object. Most cultivators under-pot it, which is a mistaken notion: indeed it is quite natural to suppose that a plant which attains to the size of an ordinary forest tree should require plenty of pot room before flowers can be produced of a natural and luxuriant size.

The soil should be varied according to the size of the plants. Seedling plants grow best if potted in very sandy peat; as the plant progresses a little loam should from time to time be added, until the plant is about five or six feet high, more loam should be used at each shifting; when the plant attains a large size, equal parts of loam and peat may be used; by strict attention to the above directions, and supplying the plant plentifully with water during the growing season, fine healthy blooming plants will be the result. It is much to be regretted that so fine an object should not be hardy enough to grow in the open air, but from repeated trials, which have failed in various parts of the country, we are fearful this desirable object will never be attained.

Numberless beautiful varieties have been raised, some almost as handsome as the parent itself; most of the crosses have been between this species and Rhododendron Ponticum; these varieties are quite hardy, but they bloom rather early to be seen in high perfection in the open air. Mr Burn, gardener to Lord Aylesbury, has directed his attention with great success to hybridize between R. arboreum and R. maximum. The consequence is, he has raised a most beautiful variety which flowers later than those raised by R. ponticum; in a few years we may expect to see numberless beautiful varieties of this noble species growing in every common garden. A more interesting and delightful occupation cannot be well imagined than that of raising lovely varieties of plants; and when we consider the beauty of evergreen plants at all seasons, it must

give double interest to raise an almost imperishable plant like a Rhododendron.—Paxton's Mag.

CULTURE OF COMMELINA CÆLESTIS.—Sow the seed on a moderate hot-bed, with the other annuals, about the middle of February, or earlier; but in the latter case it will be necessary to pot the plants, and keep them under glass until the beginning of May, when they may be turned out in the flower-ground; or it may be sown in the open ground in the beginning of March. The ground should be moderately rich and light, although any ordinary garden mould will answer; cover the seed half an inch deep with light and sandy earth, and, should the weather prove genial, the plants will appear in about a fortnight, and require no further care than to be kept free from weeds, and watered in very dry weather. By the beginning of July the plants will be in blossom; and either in beds, masses, or as solitary plants, add greatly to the beauty of the flower border. Persons possessing the plant may have it in bloom in May, or even earlier, by treating the roots as we do those of the dahlia, viz:-planting them in pots, and plunging the pots in a moderate hot-bed, placing them in decayed leaf-mould under glass; here they will soon vegetate, and may be placed in the open ground as soon as danger from frost is not any longer to be apprehended. By treatment which every gardener understands, such as sowing at different seasons, the plant may be made to flower at any time, or be kept in blossom all the year round. The roots require, in order to preserve them from frost, only the ordinary care of placing a few inches of sand, turf-mould, ashes, or the like, over them as they stand in the bed; or they may be raised and preserved in sand in the manner that carrots are sometimes kept during the winter .-Ibid.

The Cow Tree.—One of the most remarkable phenomena of the vegetable world is the cow tree, described by Humboldt in the following terms, as growing in the Cordilleras of South America:

—"On the barren flank of a rock grows a tree with dry and leathery-like leaves; its large woody roots can scarcely penetrate into the stony soil. For several months in the year not a single shower moistens its foliage. Its branches appear dead and dried; yet, as soon as the trunk is pierced, there flows from it a sweet and

nourishing milk. It is at sunrise that this vegetable fountain is most abundant. The natives are then to be seen hastening from all quarters, furnished with large bowls to receive the milk, which grows yellow and thickens at the surface. Some empty their bowls under the tree, while others carry home the juice to their children. The milk obtained by incisions made in the trunk is glutinous, tolerably thick, free from all acrimony, and of an agreeable and balmy smell. It was offered to us in the shell of the trituros, or calabash tree. We drank a considerable quantity of it in the evening before we went to bed, and very early in the morning, without experiencing the slightest injurious effect. The viscosity of the milk alone renders it somewhat disagreeable. The negroes and free laborers drink it, dipping into it their maize, or cassava bread." Mr. Lockhart has subsequently afforded the following additional particulars concerning this tree : - "The Palo de vaca is a tree of large dimensions. The one that I procured the juice from had a trunk seven feet in diameter, and it was one hundred feet from the root to the first branch. The milk was obtained by making a spiral incision into the bark. The milk is used by the inhabitants wherever it is known. I drank a pint of it without experiencing the least inconvenience. In taste and consistence, it much resembles sweet cream, and possesses an agreeable smell."

Receptacles for Milk.—All the various milky juices reside in the bark and leaves, and are not found in the wood. They are contained in distinct receptacles, and may be extracted by means of incisions chiefly in the upper parts of plants, and which do not extend deeper than the bark; otherwise, they would be diluted and impoverished by mixing with the ascending sap. M. Berthollet has recorded a remarkable instance of the harmless quality of the sap in the interior of a plant, whose bark is filled with a milky juice of a poisonous nature. He describes the natives of Teneriffe as being in the habit of removing the bark from the Euphorbia canariensis, and then sucking the inner portion of the stem in order to quench their thirst, this part containing a considerable quantity of limpid and non-elaborated sap. The reservoirs which contain the milky juice of the wild lettuce (Lactuca virosa,) are so remarkably irritable, that the slightest touch is sufficient to cause it to be ejected from them with considerable force. When this plant is about

to flower, if an insect happens to crawl over the surface of the stalk anywhere near its summit, a jet of milk is propelled. In general, plants which secrete these milky juices, love the light; few are found to affect shady situations, and none are aquatics. By cultivation, their noxious properties may be greatly subdued.—Dr Lardner's Encyclopædia, BOTANY.

New Process for Winding Silk, &c. -Mr Durant at Jersey City, is making extensive experiments in winding silk from worms of his own rearing. He has six different plans for the worm to wind the cocoon. Mr D. has likewise discovered a native silk worm of our forest, whose cocoon is fifty to eighty per cent. heavier than that of the Asiatic. Its silent labors are often encountered in the solitary depths of our forests, on bushes and trees chiefly the elder, but like many other of nature's works prepared to our hand, they have been passed by unheeded. Mr Durant hopes to domesticate this worm, and direct their habits to the purposes of useful industry. One of the great advantages resulting from this would be the very superior quality of the Silk Worm Gut, so much used by the amateur fishermen, and which this worm furnishes 80 per cent. heavier and stronger than those hitherto in use. This glutinous matter is known to be the most tenacious substance of any thing we are acquainted with spun out to the same fineness. In fact, this of Mr Durant's, though not thicker than two horse hairs braided, and therefore scarcely perceptible to the fish, in which deception consists its value, it is enabled to raise a weight of 100 lbs., and consequently with ease raise a powerful shark, for example, of 40 lbs., struggling with all his additional muscular force to escape. To give an idea of the value of this article, we may mention that sagacious fishermen are willing to pay for one selected from the Asiatic worms from 12 1-2 to 25 cents, and there are thousands in the market, of inferior description because they are from a small worm, and which may be purchased for one cent a piece. — Journal of Commerce.

A HEALTHY RECREATION. — Among the pleasant employments which seem peculiarly congenial to our sex, the culture of flowers stands conspicuous. The general superintendence of a garden has been repeatedly found favorable to health, by leading to frequent exercise in the open air, and that communion with nature which is

equally refreshing to the heart. It was laboring with her own hands in her garden, that the mother of Washington was found by the youthful Marquis La Fayette when he sought her blessing as he was about to commit himself to the ocean, and return to his native clime. The tending of flowers has ever appeared to me a fitting care for the young and beautiful. They then dwell as it were, among their own emblems, and many a voice of wisdom breathes on the ear from those brief blossoms, to which they apportion the dew and the sunbeam. — Mrs. Sigourney.

DIRECTIONS FOR MAKING CURRANT WINE.—Our Tennessee correspondent, who communicated the following, says—"We are now using some wine, made according to this recipe, and find it decidedly superior to any foreign wine for the table. The imported wines are all too strong."—Cultivator.

Gather your currants when fully ripe: break them well in a tub; press them through a sifter; then strain them through a flannel bag, and measure the juice. Add two gallons of water to one of juice; put three pounds of New-Orleans sugar; stir it till the sugar is quite dissolved. In straining the juice of the currant, use a hair sieve, and not one of wire; then use a close tow linen bag, and afterwards a flannel one, to pass the juice through. The juice must not be permitted to stand over night. Observe that the cask be sweet and clean, and such as never been used for beer or cider, and if new, let it be well seasoned. Do not fill your cask too full, otherwise it works out at the bung, which is injurious to the wine - rather make a proportionate quantity over and above, that after drawing off some of the wine, you may have enough to fill up the cask. Lay the bung lightly on the hole to prevent flies, &c. from creeping in. In three or four weeks the bung hole may be stopped up leaving only the vent hole open till it has done working, which is generally the middle or last of October. It may then be racked off if you please, but I think it best to leave it on the lees till spring, and if not wanted for present use, it may be left on the lees for two years without

When you draw off the wine, bore a hole an inch at least from the top hole, and a little to one side of it, that it may run off clear of the lees. Some put in spirit, but I do not think it advisable. Do not suffer yourself to be prevailed on to put more than one-third

juice, for that would render the wine hard and unpleasant, nor too much sugar, as that would deprive it of its pure vinous taste. It improves by age.

DESTRUCTION OF INSECTS AND VERMIN.—It has long been known, that the leaves of the Elder when put into the subterraneous paths of moles, will drive them away: when the same in a green state are rubbed over fruit trees and flowering shrubs, or when strewed among corn or garden vegetables, insects will not attach to them. An infusion of these leaves in warm water is good for sprinkling over rose-buds and flowers subject to blight; also to prevent the devastation of the caterpillar.

A Pennsylvanian farmer states, in a late American journal, that the water in which potatoes have been boiled, sprinkled over grain or garden plants completely destroys all insects, in every stage of existence, from the egg to the full grown fly.

Ammoniacal liquor, produced in the manufacture of gas from coal, and to be procured for the trouble of carrying, at any gas work, will eventually destroy the grub and other worms, which so often defeat the hopes of the gardener; more particularly as regards his early crops. So far is this liquid from having the property of injuring even the tenderest plant, that it seems rather to invigorate than otherwise.

A paste of charcoal powder, or soot and train oil, laid on the trunks of trees, in rings or circles, by means of a brush, a few inches from the ground, will form a barrier over which snails or grubs, &c. cannot pass.

Cabbages, &c. may be easily guarded against the depredations of caterpillars, by sowing a belt of hemp seed around the borders of the ground where they are planted; for it is a well known fact, that none of these vermin will approach the place so enclosed.

Destruction by the fly in turnips may be prevented by dividing the seed intended for one day's sowing into two equal parts, and putting one part to steep in a vessel containing soft pond, or ditch water, the night previous to its being used. Next morning mix the whole together, and add to each pound of seed two ounces of flour of sulphur. It has been adopted with success for many years by the intelligent farmers of the south-west of Scotland.

The American farmers effectually prevent the blight or mildew

from injuring their orchards, by rubbing tar well into the bark of the apple trees in the spring season: this is done about four or six inches wide round each tree, and at about a foot from the ground. Abundant crops generally follow this treatment.

The gumming of fruit trees is to be prevented by forming a compost of horse-dung, clay sand, and tar. This applied to the trunk and stems of fruit trees, after being properly cleansed, will prevent that spontaneous exudation, called gumming, which is so injurious to their growth.

The growth of weeds around fruit trees recently transplanted does the latter much injury, and diminishes the fruit both in size and quality. Sonini, in his Bibliotheque Physico Economique, states, that to prevent this the German horticulturists and farmers spread on the ground, around the fresh transplanted trees, as far as their roots are supposed to extend, the refuse stalks of flax, after the fibrous parts have been separated. This treatment gives them surprising vigor, as no weed will grow under flax after the fibrous parts have been thoroughly separated and the earth remains fresh and loose. Old trees treated in the same manner, when languishing in an orchard, will recover and push out vigorous shoots. In place of flax stalks, the leaves which fall from trees in autumn may be substituted; but these must be covered with waste twigs, or other more weighty materials, to prevent the wind from blowing them away.

Mr Macdonald, of Scalpa, in the Hebrides, having had his corn, &c. considerably injured by mice, and other vermin, put at the bottom, near the centre and at the top of each stack or mow, as it was raised, a handful of the stalks of wild mint, gathered near a brook in a neighboring field: he never afterwards had his grain consumed. He tried the same experiment with his cheese and other articles kept in his dairy, viz. by laying a few leaves green or dry on the articles to be preserved from their attacks, and with equal success.

To prevent hares, rabbits and rats from barking young trees and plantations, take any quantity of tar, and six or seven times as much grease, stirring and mixing them well together; with this composition brush the young trees, as high as hares, &c. can reach. This will so effectually prevent them from being barked, that if an ash plantation were made in a rabbit warren, the same would remain untouched.—Gardener's Gazette.

## QUINCY MARKET.

### [Reported for the Horticultural Register.]

APPLES, Winter,	barrel, 1 75 to 2 25
Good Fall,	bushel, 1 25 1 50
BARBERRIES,	do. 75 1 00
BEETS,	do. / 75
BEANS, White	do. 2 50 2 75
Shell, Saba,	quart 20
BROCOLI,	head 12½ 25
CABBAGES,	dozen 50 75
CAULIFLOWERS	head 12 25
CARROTS,	bushel 75
CELERY,	root 6 12
CRANBERRIES,	bushel, 1 50
GRAPES,	pound 75
LEMONS,	box 3 00 3 50
NUTS, Almonds, (Soft shelled)	pound 7 8
(Hard)	do. 4 5
Filberts	do. 3 3-4 4
English Walnuts	do. 5 7
Castana,	do. 3 4
Pea Nuts,	bushel 1 25 1 50
ORANGES,	box 3 00 5 00
ONIONS,	bushel 1 00
POTATOES, barrel, 1 00 a 1 25 -	do. 50
PEARS,	peck, 67 75
PEPPERS,	pound 4
SWEET POTATOES,	bushel 1 50
SQUASHES, Crookneck,	pound 1 1-2 2
Valparaiso,	pound 3
TURNIPS,	bushel 75
Boston, Nov. 2, 1837.	

## HORTICULTURAL REGISTER.

AND

#### GARDENER'S MAGAZINE.

DECEMBER 1, 1837.

ART. I.— A Descriptive Account of the Origin, Culture, Progress and Productiveness of the celebrated Black Hamburgh Grape Vine, Hampton Court, England. By Edward Sayers, formerly an apprentice in the Gardens.

PERHAPS there are few individual plants in the vegetable kingdom more generally known from record, and that have been the grandparent, as it were, to so useful and numerous a progeny, as the celebrated vine about to be described. For although it is pretty certain its first origin was from Hamburgh, from which it derives the name Black Hamburgh Grape; certain it is, that most of the grape vines so named now extant, can be traced in their first progeny to the old parent vine at Hampton Court.

From the account given to me by the head gardener, Wm. Padley, Esq., in the year 1824, while thinning the fruit, it appears that the vine, if now alive, is over 70 years of age. For at that time Mr P. informed me it was sixty years of age and had been under his inspection with the same mode of culture upwards of 40 years; and the fact was farther corroborated by an old man, Henry Taylor, 80 years of age, who was educated and worked in the gardens all his life time; he also affirmed the fact, of planting the vine in the place where it then stood, with his father.

Mr Padley observed, it had always been a remarkably healthy vine, and a very great favorite with George the Third, who, during his later years, made it a practice always to see the vine in full

fruit and vigor, before any grapes were cut from it, yearly. But, George the Fourth seems to have been more fond of the juice of the grapes than the beauty of the vine, for he seldom or ever visited it or the gardens, although from them his dessert was principally furnished, and he was certainly one of the greatest critics and connoisseurs of fruit of his day.

The first origin of the vine, says Mr Padley, was from Hamburgh about 60 years ago; four cuttings were sent under the name of Black Hamburgh to his majesty George the Third, but two only were made to vegetate, one of which was sent to Cumberland Lodge, and the other retained and planted in the place where it now grows. He continues, "The house was then a small pinestove used for succession pines, but in consequence of the vine making such rapid growth and the fruit being of a superior quality, it was entirely appropriated to its growth, which soon covered the whole of the roof, and it was therefore deemed requisite to enlarge it, to allow the plant to grow to its full extent; which, however, was not found sufficiently large and it was again enlarged to the present size.\* He further remarked that the extraordinary growth and size of the vine, has been the cause of many erroneous ideas among gardeners relative to the probable cause of its large growth, as there never had been any border for preparation made purposely for it: many suggested that its fibrous roots had perhaps found their way to the margin of the Thames (which was probably about 115 feet from the base of the main stem;) this was however controverted by the fact that one of the roots of a considerable size was found traversing some distance up a dead drain, that was opened for the purpose of being cleaned: but from the probability that the vine received much of its sustenance from that source, it was allowed to remain untouched. The vine being placed in that part of the garden where much of this kind of nutriment could be obtained, it is very probable that its chief support was obtained this way.

The method of pruning then, and, as it appeared, always before, was that which is strictly called the spurring system; and the manner of training or framing the vine, was by leading three main shoots from the north corner of the front of the house (where the vine is planted) along the front to the south end, where they were turned

<sup>\* 75</sup> feet long, 17 wide, with an elevation of about 45°.

and brought round to the back part of it, and returned about half way back; therefore the extreme point of the main shoots was over one hundred and twenty feet from the roots. From the main shoots laterals were trained across the house, and made to meet in such a manner that the roof was entirely covered.

The method followed in the culture of the vine, was to winter prune it in the month of February; and to keep it as late as possible before it vegetated or broke, when it had the usual treatment given to vines in such situations; until the flowering commenced, when a little fire was used to set the blossom; after this period no fire was used during the growth of the fruit; but, in the fall, when the grapes were ripe, a little fire was used to keep out the damp. The fruit was allowed to hang on the vine until the latter end of January, when it was cut, and the same process was followed for many years.

The management of the vine was under three different persons, during my time in the gardens: Mr Groves, the foreman of the melon ground, had winter pruned it twenty years; Mr William Sorford, who superintended the private gardens, had the management of it, as regards giving air to the house, twenty years or more. The person who had the charge of the second houses in the melon ground, summer dressed it, thinned the grapes, and attended to heating the house, &c. The general produce of the vine was supposed to be about sixteen hundred pounds weight of grapes a year, as the bunches were generally thinned to about that number, which were estimated at a pound weight each. In the year 1818, in order to try the probable weight of grapes which the vine would bear, 2,200 bunches were left on, which were calculated, perhaps not unjustly, to be one ton, or twenty hundred weight of grapes.

The Black Hamburgh Grape may be said to be excelled by none as a fruit of the first order in flavor, and its excellent appearance as a dessert renders it equally applicable as a handsome fruit. To this may be added, it is, when well managed, an almost certain bearer; and to further assert these facts, it may be said that half the grapes cultivated under glass in Great Britain and America, are the Black Hamburgh.

It is a singular fact, and rather to be regretted, that such authors as Loudon and his followers should designate this grape as the "Red Hamburgh," when it is, when well ripened, a jet black, and is as properly named as it possibly can be under the name of Black Ham-

burgh. But there is a singularity in this vine, which is not perhaps seen in any other kind, which is, that the whole produce of fruit on a vine, in a damp season of its ripening, is red; and on the contrary, if a fine sunny season, it ripens a jet black. And hence a common saying among the gardeners at Hampton Court, of a damp humid season, that "the old vine would produce red Hamburghs that year." The fact is, that this fruit, like many other kinds, rarely ripens well without the influence of sun and air; and many instances of the above mentioned may be quoted in this country, in different parts, of the true black Hamburgh vine ripening its fruit of a red color.

From the manner of treatment of this vine and many large ones, as that of Cumberland Lodge, managed by spurring, we may draw an inference that it is the most correct system, as, certain it is, that the heaviest crops of grapes from the spaces covered have been obtained under that method; and although many fine crops of this grape have been grown from the caning system, it is very doubtful, if a fair trial was given to two separate houses of the same dimensions for a number of years, if any system, either known or that could be projected, would answer so good a purpose as that of spurring, and allowing a vine to extend its branches so far as its nature requires, without exhausting its strength and constitution into a feeble habit, by overbearing it, when in a young state; (a system often adopted, and the cause of many fine houses of grapes being crippled in their infant state.) The coiling, caning, and Thomeroy systems have their respective merits, where produce and local circumstance predominate; but where space and time are in unison with a well matured soil for vines to root into, and other circumstances congenial to the full development of the vine, I think the spurring sytem will be found the most profitable where houses are to be established for a number of years.

It may be laid down as a general law in the vegetable kingdom, that every plant or tree, to come to its proper size and yield its best and greatest produce, should be allowed to extend to its proper growth without being curtailed by any artificial means; and it will be found in the grape as in all other kinds of fruits, that whenever the free born limbs of nature are cramped or curtailed either to hasten or confine fructification into a contracted space, that the natural habit and vigor of such plants are in a measure retarded and suspended from that habitual character they would otherwise attain.

It is also a fact well known, that the vegetable kingdom like the animal, in renewing its progeny from one family to another, assumes a different force of natural habit, as regards a more or less vigorous stature, health and general feature; hence the oak spreads its acorns around at the same time, season, soil and location; but the young plant arising therefrom, in course of years, with the same favorable situation, assume a different size and healthy appearance. And the same thing happens in all kinds and families of trees and vegetables.

# ART. II. — Remarks on the Culture of the Tree Rose. By Rosa.

The increasing number of splendid varieties of the much esteemed family of Roses, and their admission into every flower garden, and pleasure ground, being a desideratum, induces me again to resume the subject of their culture as standards. During the present summer I have been much struck with the increasing taste for their culture on lawns, and to exhibit their splendid heads in the centre of a flower bed, or back part of a border.

In remarking on the growth of a tree rose, I must observe that the rings round the bottom of both stem and branches are the depositaries of a dormant bud, which will not be called into action unless the buds above be injured, or unless the sap arise so profusely as to be unable to expend itself by the upper parts, in which case the buds below break out; though, indeed, they will occasionally do so, as the natural act of the tree in preference to rising higher. This is more observable in the wild rose than almost any other plant, and perhaps may, in some degree, explain the reason why budded roses are shorter lived than those on their own bottom; for any one who has at all observed the growth of wild stocks, must have noticed that the original head is seen generally on hedges in much worse plight than the shoots which have been subsequently formed at its base. This tendency of the dog-rose to break out below, must be checked in two ways; the first, by destroying every sucker and shoot as it starts, and the second, by finding full work for the sap above, and by giving it a free passage.

If then, in cutting the top of a tree at pruning time, you leave a

couple of buds on every shoot of last year's growth, or three at most upon a very strong one, there will be quite enough to occupy the sap, keep the tree within bounds, make it much handsomer, save the sap the expense of maintaining old wood, and give it a free course. If there be more sap than enough, a fresh shoot will likely enough start from the crown of the graft, or the rings upon the first year's shoot, and increase the head of the tree, as well as bring you back with new wood nearer home—a matter always desirable as tending to keep the head from straggling.

Cutting to the lowest buds always leaves the sap with but a short channel to pass through, strengthens the branch below the buds, and is every way beneficial, if care be taken that a sufficiency be left to occupy the sap.

If the tree be not pruned at all, it will lose its shape entirely in a single year, afford little or no bloom the next, and eventually straggle to death.

Trimming the shoots has nothing essentially different in the manner of execution to trimming the stock; in trimming to a bud, barely the thickness of a sixpence should be left above the bud, and the excision should form a slant about equal to that caused by dividing a square from angle to angle: if more were left above the bud, it would die down to the bud, and prevent the bark from healing over the wound; in general, the line of the bud is the slant the knife should make in its passage through the shoot.

Cutting out old wood should always take place where it can; the desirable point being to keep near home, as it is called; when, therefore, your tree throws out a fresh and vigorous shoot, close to the base of an old branch which has straggled too far from the graft, cut out the old wood in March, close to its base, leaving the young shoot to supply its place, and receive its nourishment. This principle well applied, will always keep the trees in bounds; but as this requires judgment, and cannot well be explained in writing, take a lesson upon the subject, the first convenient opportunity, from a scientific gardener.

A tree well formed, with a promising head, and in health, ought, the spring succeeding the budding, to have a clean straight stem, no lumps or knots, one shoot quite at the summit, and two, or at all events, one other shoot as near as possible also to the top; if there are two shoots only, at opposite sides to each other; if three, form-

ing a triangle, if more as nearly equidistant from each other, in the diameter of the stock as possible, (and here be it observed, that the more shoots, at the top of the tree, the handsomer and quicker is the head formed,) each with a bud inserted in it, close to the stem: and at the cross cut, where the bark of the bud usurps the place of the original bark of the stock, a sufficiency of sap ought to have exuded, not only to have joined the bark of the bud with the unmoved part of the bark above it, but also to have joined the separated part of the bark of the stock to the same place, and thus linked the two barks of bud and stock to the single bark of the stock above them.

The edges of the vertical slit in the bark do not heal by attaching themselves to each other, but the bark of the bud underneath them forms a connecting link, and the edges above mentioned perish insensibly away, leaving little or no scar behind. The second spring, the tree becomes more perfect, the extraneous parts of the stock, if any remain, are cut off, as well as those of the shoots, and the head so arranged as to throw its buds where they are wanted to make it round, even, and handsome. If, however some shoot be obstinately bent on growing in any direction, spoiling the appearance, and crossing the others, by no means remove it on that account alone, but place a little twig across from it to any other convenient branch, and confine it for the season as you wish it to be, removing the ligature in the succeeding spring, or even in the same autumn when the sap is down.

Lastly, the third spring the tree should show itself with all its wounds nearly closed, its buds strong, full, and healthy, and it should look perfectly natural, those parts of the shoots upon which the buds were placed more incorporated with the stock. The bark clean, no dead wood; and wherever a shoot has been shortened, the place so grown over as to leave no dis-sight, which will be the case for some time wherever any wood more than one season old is cut away, and a thin shoot of a single year springs at the end of it. This is the reason why forest trees look so ill when shortened as old ones, viz. that the taper appearance is destroyed, and wood of five or six years' growth is continued by the shoot of a single spring, and thus a piece of wood, of the diameter of half a dozen inches, has a little mean looking shoot, or in all probability half a dozen, not thicker than horsewhips, at the end of it.

Whatever it is worth while to do, it is worth while to do well; work properly commenced does not require that constant superintendence which a bad beginning is certain to render necessary, and which eventually involves a much greater expenditure of time than any labor bestowed at the outset could have demanded.

Having thus brought our subject to a close, as to the operative part, in preparing and perfecting the tree, it may not be amiss to spend a few moments in the consideration of the effect expected to be produced by it when planted out.

There are three causes of beauty in a tree, shape, foliage, and flowers. Shape (to a certain degree) we artificially gain, foliage and flowers must depend upon the sort; the foliage is the more permanent, the flower the more striking. Planting out, then, must depend entirely upon the effect desired, and the taste of the party planting, as to variety of foliage, height, flower, its color and continuity; a tree with rambling shoots suits one place, and with a cauliflower head another. The tree roses never look well in a round clump; they must have a single appearance, or be in some sort of line.

If your roses are to look, when finished, like a sloping bank, plant your heights in succession, viz. each under each; but if they are to have a less forced and regular appearance, and a more single and light look, leave out an intermediate height, as thus: a two feet front of a three feet, &c.

Be it observed, that a three to four foot standard is most in keeping with the head it carries, and being nearer the ground, has a very natural and steady effect, and in confined places, it is unquestionably best in its appearance, but if the tree is to be distant from the eye, or the shrubbery, or the walk be large and increasing in distance, a four foot standard is certainly more distinguishable, and has a much greater effect.

A foot standard is of little or no use, except it be intended to approach the edge of a border, or is grafted for the convenience of affording nosegays or increasing the quantity of the plant placed upon it.

The heights most in use having been shown, it may be remarked, that for a weeping rose to stand singly, (perhaps surrounded with a wire guard and creepers upon it to have a more marked effect,) you cannot find a stem too high, if it be proportionally strong.

A fine plant of this sort, six, seven, or even eight feet high, budded with a noisette, or boursalt, looks beautiful, and its long free branches, covered with clusters of roses, have a wild and luxuriant appearance, which give a distinct character to a tree budded in this way.

Thus having arranged where the plants are to be, and having made the earth good all around, stake up each tree with a neat, clean hazel stake, (unless the stock be so strong as not to require it,) saw off the top level with the top of the wild stem exactly, a matter that conveys a great air of neatness, and with a piece of bass, or better a small strip of pitched rope, attach your tree to the stake.—Harrison's Floricultural Cabinet.

ART. III.—On Laying out Gardens and Ornamental Plantations. By Edward Sayers.

ON PLANTING ORNAMENTAL TREES TO PROTECT BUILDINGS AND TO GIVE EFFECT TO LANDSCAPE SCENERY.

The planting of ornamental trees may be considered under different heads as really useful, by giving an additional value to property, convenient as relates to domestic comforts, and adding a feature to landscape scenery of the most prepossessing nature.

Without taking into consideration the value of forest trees, as regards the several uses they are applied to as timber, (which will undoubtedly increase as the towns and cities on the seaboard increase in population; and whilst the axe continues to diminish the timber forest of the country,) the planting of ornamental forest trees is really useful as relates to the domestic comforts of the inmates of dwellings, that are protected and ornamented by them; by affording shade in the summer and protecting the building from the cold blast of winter. Ornamental plantations of this kind also give a mellow and finished cast to the surrounding scenery, and impress the traveller with an idea of the additional value of property, arising from an enterprising and intelligent community. And although much has been and is yearly doing, as the seasons roll on, in every section of this country in the improvement of ornamental plantations, there are

two considerations which seem to leave much to be done in that interesting subject: namely, the former idea of laying bare certain districts by cutting down almost every forest tree; and the rapid growth of enterprize and commercial wealth being the cause of numerous dwellings of the first order to be built in the vicinity of cities in rapid progression within these few years, in situations which can only be ornamented with trees by a progressive culture which depends much on management.

The principal object of this kind of planting being that of real utility, blended with a picturesque effect, a certain knowledge of the different trees to be used is requisite to obtain the desired purpose; as that of their port or habit, natural locations, the soil and favorite situations in which they thrive and form into the most beautiful structure and foliage. Having ascertained these prerequisites, which can easily be done by any intelligent observer taking the trouble to make a general survey of the trees growing in the neighborhood in which he intends to plant,—when their healthy or meagre habits may be practically ascertained in a more correct manner than any theoretical essay can be given by the pen,—the next thing to be considered is the soil and location of the ground to be ornamented, which should be in accordance with that of the most thrifty trees in their natural sites or place of growth. For let it be recollected, that the most beautiful kind of trees when assuming a sickly appearance greatly depreciate the good effect of ornamental plantations of this kindwhilst, on the other hand, those of less beauty, when in a healthy condition, perhaps serve to make a fine contrast in the general group. There is some taste also required in the arrangement or planting the ground, which must be kept in view with the natural habit of the trees before examined; which should be grown to their natural magnitude, so that some idea can be formed of the future appearance of the improvement about to be made, as well as the first planting or present appearance.

Having ascertained the nature of the soil and location intended to be planted, and made a selection of such trees as seem to be suitable to the intended object, the next thing to be attended to is that of planting them in their proper places, where they can thrive and have a free, easy and useful appearance. In effecting this part of the business, the most exposed situations at the north and northwest quarters should be planted in a neat and economical manner.

If a building is to be ornamented, the first consideration is in planting on the north and northwest quarter to break off the cold winds and protect it from storms and the like accidental causes that may happen. All kinds of unsightly objects that are in view should be concealed, and the whole group should have a fine picturesque effect at a distant view. This may be accomplished by a little attention to the before named requisites.

Whilst on the subject of ornamental plantations, I cannot refrain from making some remarks on the great neglect of a subject that is so apparently the very nerve of useful improvement in almost every country, and more especially in this where shelter and shade are accomplished by no other means in so advantageous a manner as by the presence of ornamental trees. The neglect of planting appears to be in a measure owing to the too general idea of a speedy return for money expended on general improvements; but it must be recollected that every person who plants in this manner is almost certain to realize his first cost by the additional appearance given to his property which stamps a value as it were in the same manner, as if the trees were useful for the purpose of timber. There is also a kind of social effect given to the traveller when he passes through a country where buildings of this kind are ornamented by the presence of trees intended to give shelter and shade; and indeed I know not of any legacy that can be committed from the father to the son, of a more useful and affectionate nature, than a fine grove of trees planted and reared by a careful and diligent hand. If such useful records were to be handed down from one generation to another, the bleak barrenness of landscape scenery, which is now in many places apparent, would be transformed into pleasing groups of ornamental plantations that indicate social comfort and real meaning.

[To be continued.]

# ART. IV.—On Raising Carnations and Picotees from Seed. By an OLD FLORIST.

THE culture of the Carnation, though elaborately written upon by many with ability and experience, has in one point, and that a very material one, been either totally neglected or slightly or discouragingly mentioned, I mean the progressive improvement of the flower and its subvariety, the Picotee, by raising new plants from seed. Hitherto we have been taught that the production of new and fine varieties of either Carnation or Picotee, is an extremely difficult and even arduous undertaking—the proportion being from one to two good flowers to one hundred inferior and worthless plants. With this I perfectly agree, provided that the ordinary mode of obtaining the seed be pursued. We are told that it is a plant that never produces seed in considerable quantity, nor even any at all, unless in very dry and warm summers and under peculiar treatment, and even then with difficulty, arising as it is stated "from the extreme doubleness of the flower," a mistake originating either from ignorance of the natural structure of the flower and its physiology, or from want of sufficient experience in the writer. Carnation is one of nature's most brilliant offerings to the flower garden, and although almost universally cultivated and admired for the symmetry and fine coloring of its blossoms, and for its delicate and grateful perfume, it is rarely seen in its fine varieties, some of which are really splendid and admirable, eclipsing all the flowers of its season, and making it as the pre-eminent ornament of the summer, as the Dahlia is of the autumnal months.

The scarcity of those fine flowers arises from two causes—first, from the jealousy of the few florists possessing them, who think them worthy of being exhibited and distributed to the initiated only; and secondly, from the neglect of raising plants from the seed of the best flowers, and from such only. Any florist who has sufficient energy and who wishes to derive more gratification from the culture of his Carnations, than he has yet enjoyed, may, by attending to the following directions obtain ample amusement and an abundant repayment for his time and trouble, in the production of many valuable and magnificent new flowers.

It is true that nearly all the blossoms of Double Carnations, if

unaided by the hand of the gardener, will be unproductive of seed, but they are in very many cases capable of being made fertile. The organs of reproduction are in almost every instance fully developed, from the crowded state of the petals the operations of nature for production are defeated.

Every gardener and florist should know that plants are analogous to animals in their power of multiplying their kind, and require the co-operation of the sexes. In the Carnation, though ever so double, the male part of the flower or stamen is generally found, as is also the pietil of the female portion, together with the ovary, containing the embryo seeds, which may be observed by examining the blossoms of any double Carnations. The sexual distinctions are most easily distinguished. The florist, to be successful in obtaining seed, has but to imitate nature, and by rendering his double flower as similar as possible to the single one facilitate her operations. This is done by extracting with a double pointed scissors the supernumerary petals, leaving only the outer guard leaves, taking care, however, not to injure the stamens or ovarium. This should be done before the anthers burst and shed their pollen, in order that the petals may not prevent its falling on, and being received by the stigmas, which is the usual cause of abortion in the double blossoms of the Carnation; or the florist, if he pleases, may cut away the stamens, and apply the pollen of some other admired variety to the stigmas of the flower, thus deprived of its male organs, and so fertilize the embryo seed, which is the most advantageous way of proceeding, as the variety among the seedling plants will be more marked and beautiful; and curious to say, more like the father plant, or that from which the fertilizing pollen was taken, than the mother parent, or that which produced the seed. Semi-double flowers are more easily managed this way, and may be made fruitful with the pollen of your best double flowers. The production of flowers is often effected through the instrumentality of bees and other insects, when collecting either honey or pollen from the flowers; in such cases the seed is frequently lost by neglecting to protect the blossoms from too much wet, and to extract the decaying petals, quickly lose their beauty and brilliant coloring, and being no longer needed, wither and die; they should then be cut away, lest by retaining moisture, they should communicate disease to the base of the ovarium (where the petals had been attached) which

is of a spongy and light structure, and very liable to rot, if not preserved in a dry state. The stems should now be loosed from the stakes to which they were fastened, and the plants given as much air as possible. When the pericarpium has attained to half its size it will be necessary to remove as much of the calyx or cup that contained the flower as can be done without injuring the seed-pods. The plants will now need little further care until the maturing of the seed, when they must be carefully looked over every day, lest the pods should burst and loose their seed. When ripe, the pods should be carefully gathered and preserved unopened, until the following May, which is the most proper time for sowing, or the seeds extracted may be preserved in small well corked bottles, which is the mode usually adopted.

It has been stated, that layering Carnations prevents their flowering as well as if it had not been done, and also prevents their producing seed. This I have found is not the case, if the plants are layered sufficiently early, the bloom will be stronger, and without doubt they will give more seed in consequence of the increased resources of the plant, each layer becoming rooted, and enabled to support itself, as well as contribute to the strength of the parent plant: they ought not, however, to be detached until the seed is gathered, else a failure of your crop will be the consequence. The seeds that have ripened in the early part of the season may be sown as soon as gathered, in a sheltered part of the garden, and the young plants placed out on a well manured south border, where (with slight protection during the very severe weather of winter) they will become strong blooming plants for the ensuing summer, thus gaining a year, as by the usual culture of the plants never show their flowers until the second year from sowing. The late saved seed is to be sown, and the plants treated in the usual way. This process may seem a little troublesome, but it is really not so; and the gratification arising from the production of very many beautiful flowers, will, I am sure, amply repay the person who pursues it. -Floricultural Cabinet.

#### ART. V .- The Vine.

[The following article, from one of the most scientific and successful cultivators of the Vine in the West, N. Longworth, will be read with profit by all those who feel an interest in this subject. We copy from the Cincinnati Republican.]

The vintage this season has been later than usual, and the produce not abundant. Early in the season the vines promised as well as I have ever seen them, but our season has been unusually cool and wet, and one half our grapes dropped in the early part of it. My crop will fall a few barrels short of one hundred, but the quality promises to be good. From my own experience I should discard the old doctrine, of allowing the grapes to shrivel before gathering, and coincide with recent French writers, who are of opinion that more is lost in the aroma, than is gained in the saccharine principle. The more so, as the latter can always be supplied, and equally good with that obtained by the shrivelling of the fruit. Decidedly the finest grapes of the season, was a small vineyard of half an acre, the property of Mr Jacob Resor.

This vineyard is on the Ohio river, four miles below the city, on the side of the hill, fully exposed to the south. This is the first year of their bearing, and the fourth season since planting. His superior success this season is principally owing to their being young vines, and the ground dry. In dry, warm seasons, even a north exposure will yield better. Heretofore we have planted no vine nearer than five feet from plant to plant each way; his are planted three by four. His grapes are the Catawba, Isabella, and Cape, (Schuvlkill Muscadel.) The product of his half acre was twentyfive barrels of wine, of thirty gallons per barrel, being thirteen hundred and twenty gallons to the acre. In a recent work on the manufacture of wine, by Bussby, he states that Mr Ruinart of Champaigne, one of the largest proprietors of vines in that region, informed him, that the largest yield with them was eleven hundred gallons per acre; yet his vines were only eight or nine inches apart one way and six or seven inches the other.

The vine with us is less subject to injury than in any part of France or Germany, in which the best wines are made. They also complain of the wines becoming acid and ropy, neither of which evils have I met with in my wines. I have discontinued the cultivation of the Isabella entirely. I have made a wine from the Ca-

tawba equal, and I believe superior to the best wines of the Rhine; but it ferments unequally, and I can never tell what the quality of my wine will be till spring. In one instance, last fall, I drew two barrels from the cask in which the grapes had been mashed at the same time, and placed them side by side in the wine cellar. The one was a brandy barrel, the other a wine barrel; the former appeared to be in a state of fermentation the whole winter, was dry and not fine when racked last spring. The latter never fermented, was clear as amber, rich and sweet as the moment it was drawn from the cask. I bottled it, and it now has all the fixed air of champaigne, but I have kept it in an ante-room attached to my ice house, or it would have burst the bottles. The same is true of the wines of Xerxes in Spain, till the fermentation is over, it is not known whether the wine will prove to be Sherry or Amontillado.

I am cultivating some new native varieties of grape, that are entirely free from the hard pulp generally prevalent in our native grapes, and for the table quite equal to the foreign grape; I have not yet tested the quality of all of them for wine. I have one variety, resembling the Noiren of Burgundy, that promises to make a superior wine, both red and white, but its produce will be comparatively small. The most celebrated of the Madeira wine merchants was recently in our city, when a bottle of these wines (red and white) was set before him, together with two bottles of Madeira, very old, of my own importing, red [Tinto] and white. No intimation was given that either was domestic, but a gentleman at the table requested him to select the best; he decided in favor of the domestic. The domestic wines were new, and I cannot say that I coincided with him in opinion, but I have known others, much better judges than myself, agree with him. The Cape always makes a fair wine, and should have brandy added in the spring,-it is usual in all Madeira wines. It greatly improves by age, and resembles Madeira. At Vevay, this grape is always fermented in the skin, and a red wine made from it, which in my opinion is inferior to the white. The day is not far distant, when the banks of the Ohio will rival the rivers of France and Germany, in the quantity and quality of their wines. But after an experience of twentyfive years, and a waste of time and money in the cultivation of a great variety of foreign grapes, they confine themselves to American varieties, and the producing of new varieties from their seed.

Cincinnati, Oct. 20th, 1837.

### ART. VI .- The City Green-House.

THERE are but few appendages to the city residence that are of a more inviting and useful nature and add more to the social comforts of its inmates, than a well stocked green-house, that at once presents a pleasing and amusing variety, and is congenial to the most refined observer. For while winter envelopes, as it were, the native flora around in a mantle of white, and the flowers of the forest repose until the return of a more propitious season, the green-house presents a pleasing variety of floral riches, in the most happy manner, that are natives of the different parts of the globe; for in the mingled group we discover congeners from different countries growing in unison with one another under the same temperature and general management,-some of which are recognized as the type of the different kinds of plants that form a capital item in the commerce of nations; others are merely ornaments of nature's flora, and present some of the most finished cast of her floral architecture, with the nicest tinges of her pencil; while the whole assemblage is finely contrasted with the variegated colors and shades of the different foliage that gives a fine finish to the picture. In the mingled group is seen that pet plant of commerce, the tea tree of China, growing in company with the modest primrose of Britain; and the golden orange of Europe waves its pendant branches over the white camellia of The numerous tribe of Erica, from the cape of Good Hope also appear as prominent characters in the general assemblage, by presenting their neat and various tinselled little bells, which give new features to the whole as the winter passes on; and the various tribe of the Acacia, with its golden wreaths, lend a variation as the spring advances, when the rose and the geranium engross the attention of every visiter by their inviting appearance, and a numerous family of other pretty harbingers of pleasure are continually giving the most finished cast to the scene. And it is not the beauty of flowers in the green-house only that engages our admiration, but their regular structure and nicely finished parts, which bid defiance to all copiers to compare by any mechanical art; nor can the most accomplished artist vie with the nice tinges of nature's pencil, which are traced in many flowers in the most correct and regular manner. In most flowers there is also a regular number of parts, perhaps many

thousands of blossoms not varying one petal or part; of these it may be said one plant is a perpetual parent to another, in many cases for thousands of years, holding its primitive character in perfect unity with its first parent, and will *perhaps* to the end of time.

I know not of any thing in which the merchant or man of business can spend a few leisure hours more pleasantly, to unbend his mind from the cares of his avocations, than to view a beautiful collection of green-house plants, where it is impossible there can be any thing to mar his feelings or appear disagreeable. The temperature is also in accordance with our feelings, and we can therefore view the beauties before us without inconvenience. Nothing here can taint the morals of the most refined observer; and to the younger members of families many pleasing and useful features of the vegetable kingdom are imbibed, as botany, the utility of the different plants as relates to their domestic and medicinal properties, &c.; which in many cases is proved to be a useful compendium through our various walks in life, and ever brings to memory our infantile days of pleasure in the green-house.

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# ART. VII.—Action of Frosts and Circulation in Plants. By W. G., (Otisco, N. Y.)

The cause of this circulation of the juices of plants, and the consequent results, is undoubtedly the same which is the cause of all motion in nature, caloric; though in which of its modifications, whether of pure heat, electricity, or magnetism, cannot as yet be possitively ascertained. Irritability of any kind, either in plants or animals, is impossible without the presence of caloric,—its total absence would be the precursor of universal death. Irritability never exists without a corresponding circulation of some kind, in animals of blood, in vegetables of the necessary sap. We have the most decided proof in the course of vegetation as the seasons progress, that here it is indispensable; and in the case of animals it is hardly less plain, that on caloric depends their motion and existence, For myself I have scarcely a doubt, that under God, the movement of the blood in our veins, and our consequent nutrition; the circulation of the juices of plants and their necessary growth; the point-

ing of the needle to the pole; the motions of the planets in the heavens; all crystallization and aggregation of particles, and most of the other varied and frequently deemed mysterious operations of nature, are owing to one and the same cause, which at present, for the sake of a better name, may be termed electro-magnetism. Every discovery in science, every new revealment of the mysteries of life, motion, and gravitation, point to this cause as the source of their mightiest energies. Art in some respects has already outdone nature, and by a concentration of this organizing vitalizing power of nature has produced effects which one short century since, would have been denominated as partaking of witchcraft, or wondered at as bordering on the miraculous. Processes in the growth of plants for which nature under the most favorable circumstances requires weeks, have by art been reduced to a few hours; and the organization of the animal has been forwarded as much in as many days, as nature could have effected in as many weeks. The more vigorous and active this electro-magnetic current is when connected with vitality, the more rapid will be the development of the plant or the animal; in the animal and by the ordinary processes of nature, food is the generating agent in this constant circulation; in the plant manure performs a part directed to the same end; and the generation of this powerful agent by the voltaic plates is scarcely more tangible, than it is by the proper admixture of two or three of the principal earths with moisture and vegetable or animal matter.

Wherever the flow of this electro-magnetic fluid is regular and constant, and according to the law of its nature, every thing moves on in health and harmony; whenever this course is interfered with, its flow interrupted, or its quantity abstracted, the most disastrous results will inevitably ensue; and these effects will be injurious exactly in proportion to the rapidity or violence of the cause that produces them. Any thing which should cause or force the sap of the wood to retrograde, would, for the reasons stated above, cause the death of the tree or plant in which such a movement should occur. This fact is exemplified in the case of lightning. If the fluid penetrates the tree, and follows the wood from the top downwards, it is evident the current of the juices must be violently reversed, and experience shows that instantaneous death is usually the consequence. On the contrary, if the electric fluid glides over the bark

as it were, without penetrating the wood, the natural course of the descending sap is followed, and the injury is rarely more than superficial. Indeed in some cases such an event has proved of decided advantage to the tree, greatly increasing the rapidity of its growth; of which a striking instance was given in the French scientific journals of the last year. In the first instance, the electro-magnetic current is reversed, or destroyed, and the circulation of the sap so far as this reversal extends will of course cease; in the last instance such an effect is not produced on the ascending fluids, and of consequence no injury is done. Ordinary magnetism furnishes many things analagous to this. A heavy discharge from an electrical battery, a flash of lightning, or a heavy blow with a hammer, directed in a contrary direction to the established flow of magnetic influence, will destroy the attractive force of the magnet or the needle, until their energies are restored by a new current in the usual manner.

The expansion of the juices of plants by their freezing, or the rapid abstraction of caloric, produces the retroversion of the magnetic current, and of course the circulation of the juices, as effectually as does their expansion by the sudden elevation of their temperature during the passage of the electric fluid. In the case of the rush alluded to, it is evident the conversion of the water between the juices into ice, would by its expansive power force the fluid downwards, and rupture the vessels at once; and the same effect is produced in the extremities of the branches, or tender twigs of young trees. The more recent the growth, the greater the liability to injury, and that from two causes;—the greater fluidity of the juices, which causes them to freeze sooner, than when by elaboration and evaporation they become more viscid, filled with resinous matter, and partially converted into woody substance as it were; and because in a recent growth, the parts have less adhesion, as is evidenced by their partial transparency, and are consequently more easily ruptured and separated by the agency of compression.

All living plants and trees are several degrees warmer at all times of the year, with the exception perhaps of the warmest part of the summer, than unorganized or dead matter; and this vital heat greatly assists them in resisting the action of frost; still in our severe winters and violently freezing weather, all recently formed wood is more or less liable to be killed. Of this fact, the tops of

our native beech forests, or avenues of locust and mulberry, our nurseries of peach, cherry and other less hardy fruit trees, bear too conclusive testimony. All parts of our northen states where deep vallies or water courses extend north and south to a considerable distance, are more exposed to suffer from frost than more elevated tracts, or even our hilly regions. Of this the vallies of the Hudson and Connecticut furnish striking instances, the cultivation of fruit trees in both these sections of the country being more uncertain and difficult than in the elevated sections on either side of them. Since observations have been more multiplied, it has been ascertained that in all deep vallies, whatever may be their direction, have a greater degree of cold than the bordering hills, a fact contrary to the commonly received opinions on the subject, though perfectly philosophical, since it is clear that cold air being the heaviest must of necessity fill the vallies and decrease the temperature of such places. When the ground is clear of snow a contrary effect takes place, and owing to the radiation of heat vallies are always warmest. The basin of the great lakes furnishes perhaps the best fruit country in the United States, yet here the deep vallies that stretch into the high lands to the south, and open to the north, are more liable to have trees such as peach, apricot and mulberry, injured in our winters, than on the ranges of hills that border them. Many varieties of trees and shrubs that cannot endure the winters of Albany and Northampton, flourish unhurt at Rochester, and on the south of the Ontario generally. The greatest degrees of cold we have noticed for the past two years have been recorded in the vallies of Schoharie, Lebanon, and Franconia; and during the last winter the thermometer sunk from three to five degrees lower, on the Seneca level of West New York, than it did at an elevation of from seven to ten hundred feet, some fifteen miles to the south.

But whatever may be the nature of the current which impels the sap through the pores of the wood, or the trunks of vegetables, or enables it to maintain its elevation at the greatest height to which it ascends; and however fatal a sudden and violent reversion of this current must be, it is evident the obstacle is one which nature can surmount, when permitted freedom of operation and time for action. There is a beautiful illustration of this capacity of trees to accommodate themselves to their situation, in a range of willows in the gardens of Kew, near London. In planting these trees the natural

position of the trees was reversed, the tops properly trimmed being placed in the ground, and the roots elevated into the air. They immediately vegetated, threw out fine tops, and the growth has been as rapid and vigorous, and the trees have continued as healthy, as if the order of nature had not been apparently infringed upon.

All observers of nature seem to be agreed that the death of plants, when such an event occurs prematurely, or the killing of the young and tender twigs of trees, in the fall of the year, is occasioned by the juices being arrested by frost, before by the regular processes of nature the vessels become hardened, or in the case of trees converted into wood; and the most effectual method of preventing such results, has become an object of much interest and inquiry. There are many kinds of trees and plants which it would be perfectly useless to attempt raising in our climate, such as the oranges, olives, dates, sugar cane, breadfruit, pine apple, and multitudes of others, and which are never attempted by the nurseryman or gardener: there are others, natives of a more genial climate than ours, which still in general will succeed with us, though requiring more care than is necessary in more favored regions, and the fruit after all being of inferior qualities. Such are all the varieties of the peach and apricot; all the varieties of the grape; some of the plums and the pears, and the finer kinds of melons; and it is to the improvement of the last class, and rendering their growth more certain, that the efforts of individuals in our latitudes are principally directed.

Experience has shown that all plants possess the power to a certain extent of accommodating themselves to the climate in which they are placed; a power which is of the greatest service in what is called the acclimation of plants. Failures may now and then occur, but in a succession of years they grow less frequent, and unless of the kind which from their tropical origin and growth, are perpetually excluded from our gardens and orchards, the plants and trees become more hardy and less liable to suffer from frost and the other vicissitudes of our seasons. This effect is produced in part by a gradually less rapid growth, and an earlier hardening of the new wood of each year's growth; and art by imitating nature in these respects, has added much to the certainty which in ordinary seasons attends the cultivation of the more delicate fruits. The twigs or branches of trees are destroyed in the fall of the year by freezing

before the wood hardens, and the same effect is produced in the spring by unseasonable frosts after the young leaves and shoots have put forth. Of this a striking instance occurred in the severe frosts and snow of May 1834, in which the young shoots of the beech and butternut and other forest trees which had shot forth to any extent were effectually killed, and from which they scarcely recovered during the summer. The flower buds of the peach tree are sometimes killed in the winter, by being prematurely swelled, the only instance of this kind that occurs among our fruit trees; for though the flower buds of others sometimes are injured, it is never until they are partially opened by the warmth of spring. Perhaps every one has seen the bark on the bodies of young and thrifty trees loosened in the spring, and drying up and coming off to a considerable extent in the course of the summer; not unfrequently causing the death of the tree. This starting of the bark is occasioned by sudden and severe frosts, after the circulation of the sap has proceeded to some extent, the expansion of the juices by frost cracking and starting the bark at once from the wood.

To prevent the killing of the buds or branches in the spring, any thing which shall retard their putting forth until the proper time has come will produce the desired effect. Lowering the temperature of the earth around the trees would do this, and we have seen the blossoming of the peach put back for a fortnight by treading snow firmly around the tree, and then covering this with a dense layer of swingling tow, or the coarse tow made by dressing flax. To prevent the formation of the tender shoots which are sure to suffer in the fall, it is necessary to check the flow of the sap which urges the growth, and that so seasonably as to give the new wood time to harden before it is touched by the frosts. This is done the most surely by planting trees liable to suffer in this way, in situations and soils, which while they are favorable to the tree, are not so rich as to force its growth in too late a period of the season. Trees which grow in a dry gravelly soil are less liable to injury than those growing in wet ones, and those in a dry poor soil nearly always escape. Preventing the circulation of the juices by twisting a cord or a wire around the stem or branches that admit of such a compression has been practised and recommended by some, the obstruction to be removed when the necessity for its application ceases. We have never seen this method tried; but the philosophy seems objectionable, whatever the practice may be. At present the danger of trees being killed by frosts is felt the most in the peach and mulberry orchards or nurseries; and any method which shall secure these trees from frost will be hailed as a public benefit.—Genesee Farmer.

# ART. VIII .- Progression of Horticulture in the Vicinity of Boston.

Under the impression that the progressive improvement of the various branches connected with Horticulture, are not at all times within the immediate observation and knowledge of the different readers of the Register; and that the principal object of the various subscribers and patrons to it, is, to make themselves familiarly acquainted with the general improvements and newly introduced varieties of choice plants, with the most approved methods of culture, so far as relates to a mental correspondence with Horticulture; I am induced to submit some interesting facts, that have come under my observation, in visiting several choice collections of plants in this vicinity. As they are drawn from sources, where I have reason to believe that the possessors are ever liberal in and for the furtherance of horticultural improvements, I hope they will be interesting. My object in making them known is, with a view not only to make Horticulture agreeable to those who are really in possession of the pleasure of seeing a fine collection of plants in their natural health and beauty; but to those persons who are in the habit of noticing the passing improvements, and culture as relates to gardening. Therefore, should my object meet the approbation of the patrons and readers of the Register, my earnest expectations will be fully answered in proceeding to my subject.

It would be useless in this place to make any comment on the rapid strides of improvement which Horticulture has made, within a few years, in the vicinity of Boston; it has been often described, and is beneficially felt by all classes of people. Indeed horticultural improvements are so much under the influence of those whose munificence and disposition have been of a character to cherish moral rectitude and domestic comfort, that their example has had a ten-

dency to induce some of every class to devote a portion of leisure to gardening: the result has been of the most happy nature; and never were the different green-houses better furnished with a choicer collection, or in better health and condition, than at present.

November 20th. J. P. Cushing, Esq., Belmont place. I was agreeably entertained by Mr Haggerston, who took me through the several apartments in the houses, which contain a fine collection of plants in a healthy condition. The Conservatory, the collection of which is well chosen and arranged in a prettliy contrasted manner, has a most prepossessing appearance; on the back-stage (which is a lofty semi-circular) is arranged a fine collection of large flowering plants of the Rhododendron, Camellias, Azalias, and select kinds of plants; which is finely contrasted by a variety of Crysanthenums, showing their different hues of colors, which is finely relieved by the green foliage of the larger plants. The front stages are filled with China roses, of different varieties, and the smaller sized plants of the different kinds, many of which are in flower; one side stage is appropriated to the Cactus, containing the choicest kinds, one of the prettiest, the C. truncatus, was finely in flower; on the other stage, the Erice occupied the principal part, and a fine specimen, the E. ardens, was in flower; many pretty varieties of Oxalis were also in flower, and the whole formed a charming group of 'Flora's

In the Hot House, a fine plant of the Combretium purpureum, which has been in flower some time, was in the greatest perfection, presenting a beautiful wreath of flowers several feet in length, which was prettily contrasted by the brilliant bractes of the Poinsetti pulcherrimus; the Melestromea atromelia, and the Alamanda catharica, a pretty new variety of stove plant of a fine orange color, and many other pretty things too numerous to name. In the Hot House a number of pine-apples have been cut from plants that were propagated early last spring, and those acquainted with the culture of the pine-apple well know that this is a short time to bring it to perfection. The succession plants for fruiting in the ensuing season, are in a fine and vigorous condition, and will, by present appearance, produce fine fruit next year.

It is much to be hoped that every success will attend the pineapple, under the above cultivation; as it is certainly one of the noblest acquisitions to the Hot House, and forms one of the most prominent features on the table as a dessert.

20th. The Brighton Nurseries. Few nurseries are better supplied or managed than the Messrs Winships', who have neither spared time nor expense to make their collection complete and really useful.

It is much to be regretted that the Brighton nurseries have not been more generally noticed by Horticultural registers, as they certainly contain many things that would be beneficially communicated to the public through the medium of such journals, and the liberal disposition of the proprietors certainly has a just claim to every thing that can be done by such methods to forward their enterprising useful object in view. The arrangement of the different sections of the nurseries is of a systematic and regular order, and will most probably be improved under the strict and correct management of the intelligent foreman, Mr Storey, whose capabilities are quite equal to the task, and being educated purposely on the place, every thing connected with it is familiar to him, which is important in the nursery business. There are many things, which to describe would take much space, as the alphabetical flower-border, summer-seats, arbors, green-houses, and the like, which I shall, at some future period, more generally describe. In the green-house, I noticed many pretty things in flower, which I must defer to enumerate until a more favorable opportunity offers to speak more at large on the subject.

T. H. Perkins, Esq., Brooklyn. This fine establishment, under the superintendence of Mr Thomas Cowan, has long been celebrated for its extensive Vineries and Peach-houses, which are in fine condition and managed to a very excellent purpose. The houses consist of two ranges, upwards of three hundred feet in length each; the original is altogether appropriated to the Peach and Grape, which, when in fruit, forms a most beautiful effect; the back part of it being in the fruiting season covered with fine crops of peaches and nectarines, and the rafters bearing a fine crop of grapes. The other range, which is more modern, is of the same length, (but much larger in dimensions,) and is divided into five parts or houses; the centre one is a fine conservatory of extensive dimensions, and contains a good collection of green-house plants, especially the Camellia, of which there is a great variety,

in a very healthy, vigorous state, many of which are showing flowers; here are also some of the finest specimens of Azelia indica, of the different varieties, in flower, and a very pretty show of Chrysanthemum; indeed the collection is altogether of the best kinds of plants. Two houses at the end are appropriated to the culture of the Grape, as is the conservatory after the plants are taken from the house,—the two other houses at the end are entirely appropriated to the Peach; the back trellis is trained after the fan system, and the trees are in a healthy and vigorous condition, and are excelled by none in symmetry and regular training;\* in the front the trees are trained under the rafters, by being divided in three parts, in such a manner that the back and under trellis, have free access to sun and air; to these may be added a new house, of a capital construction, intended wholly for the cultivation of choice vegetables and fruits, as strawberries, cucumbers, &c.

J. Lemist, Esq., Roxbury. One of the longest established green-houses of sale in the neighborhood of Boston, under the care of Mr Thomas Hutcheson, containing a fine collection of rare plants, particularly the *Erica* and *Acacia*, of which there are many fine varieties, as the *Erica splendens*, *E. arborea*, *E. cruenta*, which are coming into flower. There are also some fine specimens of *Camellia*, and *Cactus*, particularly the *Cactus speciosissima*, truncatus, and the choicer kinds,—and indeed the collection is general and well selected.

Mr Miller, Dorchester, an amateur gardener, who has a neat green-house, with choice collection of plants, as Geraniums, Ericas, and like, of the best and rarest kinds. In the green-house, I noticed a fine pot of pinks in flower, which is something rare at this season, and is the prettiest flower that can be put in the bouquet. Indeed Mr Miller is quite an amateur in pinks, and has from seed perhaps the best collection to be found.

It is gratifying to see some attention paid to this neat, pretty and fragrant family of plants, for, certain it is, that they are the prettiest

<sup>\*</sup>It is much to be hoped that Mr Cowan will favor the public with a communication on his system of training and forcing the Peach, which would be rendering an essential service to many persons, particularly as the Peach is now fast depreciating in out doors culture, and if the seasons are not more propitious, must eventually be cultivated either on walls or peach-houses built expressly for it,

flower of their season, especially in the parterre, where it is hoped the *fair* patrons of the flower-garden will not miss the opportunity of introducing some of the best of Mr Miller's varieties in the planting season.

E. S.

# ART. IX.—Notices of Plants Recently Described in Foreign Works.

Deutzia Scabra. (Rough-leaved Deutzia.) Linnean Class and Order, Decandria Tetragynia. Natural Order, Philadelpheæ.-An erect, branching shrub, 4 or 5 feet high, with the whole of the young parts rough with minute starry pubescence. Branches cylindrical, or slightly angular, covered with a reddish brown bark. Leaves opposite, stalked, ovate, or ovate-lanceolate, acuminate, penninerved, minutely serrulate, with somewhat bristly ascending teeth; varying from 2 to 4 inches in length, and from an inch to an inch and a half, or even more, in breadth, grass green and scabrous on both surfaces with minute papillose bristles, especially on the veins, the under surface scarcely if at all paler. Petioles very short, 2 or 3 lines long, slightly compressed, united at the base into a ring, marked above with a narrow furrow. Flowers cymose. Cymes axillary, solitary, mostly 3-flowered, or disposed along a terminal axis, like a raceme, and then they are reduced to a single flower. Bractes opposite, linear-lanceolate, acute, entire, or sparingly denticulate, channelled, deciduous. Pedicels filiform, and as well as the calyx, copiously scabrous and canescent, with starry pubescence. Calyx the tube globose; limb urceolate, 5-lobed; lobes short, ovate, acute, pale green, erect and connivent. Petals 5, pure white, thrice longer than the calyx, oblong-lanceolate, somewhat acute, erect and slightly connivent, valvate in æstivation, the margins slightly induplicate, and erosely crenulate, especially towards the apex, sparingly clothed on the outside wih starry pubescence. Stamens 10, shorter than the corolla, outer five longer and opposite the calyx. Filaments flat, white, rather narrower towards the base, 3-toothed at the apex, the two lateral teeth, divaricately spreading, acute, compressed, the middle one erect, straight, subulate, bearing the anther. Anthers bright yellow, rounded-cordate, bilocular, the

cells short, parallel, turgid, opening lengthways, free at both extremities, and connected at the middle by a rather broad, green connectivum. Ovarium adherent, 3 or 4-celled, crowned by an elevated, fleshy, angular, orange ring, placed within the stamens. Ovula numerous, scobiform. Styles 3 or 4, free, slender, filiform, white, longer than the stamens, marked along the inside with a narrow, inconspicuous furrow. Stigmas clavate, green, oblique, viscid, and slightly channelled.

A very elegant shrub, native of Japan and China, and introduced from the latter country a few years ago by Mr Reeves, to whom our gardens are indebted for many other equally interesting plants from the same quarter. It is a plant of easy culture, being sufficiently hardy to endure our winters in the open air, and easily increased both by cuttings and layers.

The genus is nearly related to *Philadelphus*, but is readily distinguished by the induplicate æstivation of its corolla, definite stamens, with tricuspidate filaments, and free styles. The genus *Decumaria* differs only in its simple filaments and combined styles.

During the early part of summer, the *Deutzia* is covered by a profusion of white blossoms, which are highly fragrant. The rough leaves of the plant, Thunberg informs us, are employed by the Japanese cabinet-makers for polishing wood, in the manner that the stems of *Equisetum hyemale* are with us.

The genus was named by Thunberg in compliment to John Deutz, one of the senators of Amsterdam, a patron of Botany, and one of the promoters of the voyage of the former to Japan.

Platystemon californicus. (Californian Platystemon.) Linnean Class and Order, Polyandria Polygnia. Natural Order, Papaveraceæ. Platystemon.—Root fibrous, annual. Stem decumbent, branched, cylindrical, about a span high, thinly clothed, as well as the leaves, with long, slender, bristly, spreading hairs. Leaves opposite, or ternate, lorate, acute, 3-5-nerved, reticulately veined, connate at the base, 2 or 3 inches long, half an inch broad; upper ones linear-lanceolate. Peduncles solitary, one-flowered apparently axillary, but really terminal, filiform, 3 or 5 inches long. Sepals 3, or rarely 2, broadly elliptical, obtuse, concave, caducous, copiously clothed with bristly hairs. Petals 6, rarely 4, obovate, concave, manynerved, slightly repand at the margin, of a pale straw color, furnished at the base with an orange spot. Stamens indefinite, shorter than

the petals. Filaments broadly winged, obcordate, membranous. Anthers attached by their base, linear, obtuse, rather longer than the filaments; cells parallel, opening lengthways, somewhat extrorse. Pistils numerous (12-18), mostly 14, siliquiform, torulose, combined together into a unilocular ovarium. Stigmas linear, compressed, erect, copiously papillose. Ovula reniform, from 4 to 6 in each carpel, and besides those inclosed there are others borne exteriorly on the inner angles, formed by the united edges of the carpels.

Among the more remarkable plants of the Californian Flora are several anomalous genera of the natural family of *Papaveraceæ*, one of which is the one before us, which in its structure holds an intermediate station between that family and *Ranunculaceæ*, agreeing with the former in its concrete ovarium, and oily albumen, and with the latter in the tendency to a quinary arrangement of its floral envelopes, somewhat extrorse anthers, and in the final decomposition of its pericarpium.

It is a hardy annual of considerable beauty, growing in any light loamy soil, and readily increased by seeds, which it perfects freely in the open border.

It is one of the many interesting discoveries of our lamented friend, Mr Douglas, to whom our collections are indebted for its introduction.

The generic name is compounded of platus, broad, and stemon, stamen, alluding to the dilated filaments.

Baeria chrysostoma. (Golden-Anthered Baeria.) Linnean Class and Order, Syngenesia Polygamia Superflua. Natural Order, Compositæ. Trib. 4. Senecionideæ. Sub-trib. 5. Helenieæ. Div. 3. Madieæ.—The whole plant clothed with adpressed hairs. Root fibrous, annual. Stems filiform, decumbent, branched, of a livid purple, varying from a span to a foot high. Leaves opposite, sessile, linear, obtuse, entire, ciliated, recurved and spreading, channelled above, green and hairy, from an inch and a half to three inches long, and from 2 to 3 lines broad, rather fleshy, the base connate into a short sheath. Capitula radiate, solitary, axillary, and terminal. Peduncles filiform, naked, hairy, 2 or 3 inches long. Involucrum hemispherical, biserial; leaflets ovate-oblong, rather acute, hairy, green, nearly equal, those of the inner series shorter and narrower. Rhachis elevated, pyramidal, ebracteolate, tuberculate. Rays from 10 to 13, female, spreading, elliptical-oblong, notched or

3-toothed, rarely entire, bright yellow, 7-nerved; tube slender, slightly compressed, glandular, swollen and rather spherical at the base. Florets of the disk hermaphrodite, funnel-shaped; tube filiform, glandular, pale yellowish green, swollen at the base; limb campanulate, 5-toothed, the teeth ovate, acute, spreading. Filaments slender, glabrous, distinctly articulated. Anthers bright yellow, semi-exserted, united into a tube, naked at the base, and crowned by an ovate acute appendage. Style filiform, glabrous; branches recurved, semi-cylindrical, each crowned by a semi-ovate, pointed, papillose appendage. Achenia uniform, obfusiform, slightly compressed, even, and rather scabrous. Pappus none.

A curious genus of *Compositæ*, raised from seeds received from M. de Fischer, director of the Imperial Botanic Garden at St. Petersburg, and recorded in the appendix to the catalogue of seeds of that Garden for 1835. It is a native of the Russian colony of Ross in New California, the nearly related genus *Callichroa* having been obtained from the same quarter.

The present genus is closely allied to *Madaria* of De Candolle, but differs in its perfectly glabrous rhachis, and in the whole of the florets being fertile, and the rays nearly entire.

The genus was dedicated by Fischer and Mayer to the late Professor de Baer of the University of Dorpat, and distinguished for his labors in comparative anatomy. The specific name alludes to the anthers being of a yellow color, and not black, as is the case in many genera of the same group.

Clematis florida; var. Sieboldii. (Siebold's Flowering Virgin's-Bower. Linnean Class and Order, Polyandria Polygynia. Natural Order, Ranunculaceæ. Clematis.—Stems slender, scandent, 5-angular, the younger branches finely hairy. Leaves triternately parted, the segments cordate and unequally 3-lobed; lobes ovate, acute, entire, ciliated, dark green and nearly glabrous above, paler, glossy and hairy beneath, reticulately veined, the two lateral lobes oblique with unequal sides, the middle one larger and more regular. Peduncles filiform, angular, finely pubescent, 4 or 5 inches long. Sepals 5, rhombeo-ovate, acute, attenuated at the base into a short claw, membranous, petaloid, of a greenish white, furnished with five nerves, which are approximated towards the centre, the veins dichotomously branched, two inches long, and about an inch broad at the middle, the sides partly deflexed. Petals disposed in many series,

cuneately lanceolate, or linear, rather acute, recurved and spreading, becoming longer and broader as they approach the circumference, varying from half an inch to an inch in length, attenuated towards the base, the margins reflexed, glossy, glabrous, the ground of a pale cream color, suffused with a rich purple. Ovaria numerous, copiously silky. Styles short, silky. Stigmas oblong, oblique, obtuse, glabrous, marked with a furrow on the anterior side. Torus scarcely one fourth of an inch long.

Our drawing of this splendid variety was taken from a plant which flowered in the collection of Messrs Osborn and Son, at Fulham, in June last. The plant is one of the valuable additions made to our collections by Dr Siebold, by whom it was introduced from Japan, of which interesting country he is now engaged in the publication of a complete account of the history, social state, and natural productions.

The present plant appears to have been regarded as a distinct species, but after a most careful comparison with the ordinary form of *C. florida*, we are satisfied of its being only a variety of that highly ornamental species. The leaves and branches are rather more hairy, and the petals are suffused with violet spots. No plant, however, possesses stronger claims to a place in the flower garden, from its graceful habit, and from the size and beauty of its blossoms.

The plant thrives best in a mixture of peat and loam, and is increased by layers.—British Flower Garden.

# ART. X .- Autumnal Woods.

One of the first circumstances which strike us in looking at the autumnal woods, is the grouping and contrast of the colors. On one side we look into a swamp covered with the red flowering and white maples; the trees are detached and highly furnished with branches and there are no masses of foliage. But the leaves have caught the richest and most varied tints, so that we look at the swamp enclosed by the dark hills of evergreens, it seems like a gigantic flower garden, covered with the gaudiest plants of autumn. On another side we look at a more elevated meadow, decked with the scarlet foliage of the low whortleberry, and we might believe

the earth to be spread with a carpet of the costliest dye. Before us, an eminence crowned with oaks, whose dark green foliage has not received the mysterious touch, lies like a black summer cloud against the sky. Beside it, a summit covered with the dense foliage of the maples, colored with every hue, rivals the golden clouds of the October sunset. In the farthest distance

"The mountains that unfold
In their wide sweep the colored landscape round,
Seem groups of giant kings in purple and in gold,
That guard the enchanted ground."

It would be well if the hint were taken from nature, in the planting of trees and shrubbery; so as to effect the richest grouping and contrast,— if the delicate straw-colored foliage of the beech, were made to contrast with the dark evergreen; and the scarlet maple, with the silver-leaved abele or poplar; and the crimson leaves and berries of the sumach, relieved the green and white of the snowberry,—the same regard for autumnal beauty, would banish the horse-chestnut and sycamore, and supply their places with the cleaner and richer beech and maple. It would place the moose-wood with its bright yellow leaves, and the sumach, and common whortleberry, with their scarlet and crimson foliage among the most approved ornaments of our shubberies.

Popular opinion attributes this change in the color of the foliage entirely to the frost. But the writers upon vegetable physiology, give another reason which we will attempt to explain. It is well known that the principal sustenance of plants, is the carbonic acid gas which they derive from the water which the roots imbibe. This gas is composed of carbon and oxygen. The effect of light upon the leaves of the plant, is to separate the oxygen which is in the carbonic acid. During the day, therefore, the oxygen is constantly passing off, the carbon being in the leaf. The carbon is of a dark blue color, and combining with the yellow tissue of the leaf, gives its green color. Oxygen is also received into the plant directly as well as in combination with the carbon. - But the oxygen can only escape by day: when therefore the nights grow longer than the days, the leaves receive more oxygen than they can discharge. The superabundance of the oxygen destroys the green coloring of the carbon and dyes the leaf with other various hues. The fact that oxygen gives various colors to the metals, adds probability to this theory. It is probable that the frost has some influence as well as the length of the nights, by closing the pores of the leaf and thus preventing the escape of the oxygen.

This beautiful coloring of the foliage is peculiar to the American forests. Foreigners think it the most striking circumstance in our scenery. This is probably owing to the greater purity of our climate, on which account a greater supply of oxygen is furnished; and to the suddenness of the frosts by which the escape of the oxygen is prevented. The hues are more beautiful in some seasons than in others, and more varied in the interior than on the seaboard, which is owing to the difference of the climate.

It would be an object to reside upon the Connecticut river, or in Vermont, if for no other reason than to enjoy the splendid spectacle of those noble rounded hills, clad to their summits with trees of every hue. But in every part of our country, there is enough of beauty to make this season, to those who will go abroad and enjoy it, the most cheerful period in the year.— Autumn is not with us the melancholy season which English poets have described. Every thing here is glad and joyous. The air is pure, and the sky unclouded, except by those golden masses which give to the setting sun beauty. The birds returning from their northern summer haunts, stop awhile in the fields and gardens to bid us adieu; and the leaves of the forests, though soon to fall, instead of wearing the saddened habiliments of decay, like the dolphin, give token of their coming death, by putting on their gayest and brightest tints.—

Portsmouth Journal.

# ART. XI.—Miscellaneous Matters.

EARLY VEGETABLES.— Every one has observed that when lettuce seed gets scattered upon the ground in the fall, and lies in the earth during the winter, it will be up earlier, and come to maturity sooner, than where the seed is sown in the spring, be it done as early as it may. The only objection to sowing in the fall, is, the ground becomes so hard, that, although the seed comes up quickly, the plant never grows so thriftily, nor becomes so large and grateful to the palate, as when the earth has been mellowed

after settling in the spring. The same is the case with parsnips, onions, radishes, and many others.

Now, to obtain the benefit of fall sowing; and, at the same time, avoid the counteracting circumstance of the ground becoming hard, I would propose that the seed be placed in a small bag, and buried slightly, in some "safe place, till spring, when, as soon as the ground is fit to work, prepare a spot for their reception; this being done, dig them up and plant them. The seed, by lying in the ground, evidently undergoes a preparatory process, essential to a quick and healthy germination, not to be obtained in any other way. What this process is, I am not fully prepared to state; though probably it consists in the absorption of the oil that the seed contains, rendering every part of it susceptible of being acted upon by the moisture of the earth, and thereby fitted to spring quickly into life, on feeling the warmth communicated by the April sun.

It is important to have seed of any kind come up quickly after it is sown, that it may get a start in advance of the weeds, which draw away the nutriment essential to a thrifty plant, and by being first up, choke and retard its growth. Take onions, for example, which are generally three or four weeks coming up: now if they can be made to come in one, we shall thereby obtain an absolute gain of two weeks on the weeds, which, if it should not save once hoeing, it will certainly render the first hoeing less difficult and tedious.

I have witnessed two instances, where seeds have lain over winter in the ground, which fully corroborates what I have been stating.

I had occasion to dig a trench 18 or 20 inches deep late in the fall, into which I threw a parcel of radish tops, filled with seeds, which were afterwards covered up to the full depth of the trench dug. In the spring, I had this same ground spaded up so deep, that many of the radish seeds were again brought to the surface; on this I planted beet seed. In two days after the ground was thus prepared, the radish seeds had germinated, and made their appearance, and continued to grow the most luxuriantly of any that I ever saw. The other instance strikingly illustrates the benefits of thus disposing of seeds during the winter. It was the following: After having prepared some ground for parsnips, and planted them in the usual manner, I came across a bunch of seed,

where an ungathered top of a seed-parsnip had accidentally got covered up, and lain through the winter. Of this, I gathered up a handful, and threw it broad-cast upon the ground I had previously planted. In four or five days, this last seed came up and grew to be several inches high, before the first planted was out of the ground, which was as many weeks in coming up, as the other had been days. Here, though accidentally, a fair experiment was made, and positive proof of the advantages to be derived, obtained. There are many other kinds of seeds, which I am fully convinced, may be kept and prepared in the same way for early germination, with equally beneficial results. I shall test the experiment more extensively this winter with different kinds, and whether the result prove successful or a failure, your readers shall be informed in the spring.

Wm. Wetmore.

Stow, Ohio, Aug. 1837.

The following extracts are taken from a brief sketch of Fishkill Landing, a flourishing village on the east bank of the Hudson, in Duchess county, N. Y. about 68 miles from New York city, and 8 from West Point.

"Horticulture in this place is beginning to receive assiduous and praiseworthy attention. Many elegant and spacious gardens are very successfully cultivated already; and contain, in rich variety, valuable collections of the most splendid exotics. The superb Mexican tiger lily, the variegated gladiolus, and the beautiful dahlias of the most charming colors, are among the finest ornaments of any garden; but, in the delightful places of resort about the Landing, it is no uncommon occurrence to find them in company with numerous others of equal, if not greater pretensions to admiration."

"The verdant and shady forests, on the confines, consist principally of tall, straight and stately trees, eminent for both beauty and symmetry. The ground from which they spring, is seldom encumbered with brush or bushes; but finely o'erspread with grassy carpet, and richly adorned with myriads of gay flowers. The beautiful genera, neottia, lobelia, and aster, are nearly complete in the small compass of a few furlongs; while numberless specimens of others equally pleasing may be identified by the botanist, in the immediate environs. These charming forests, during the mild season, are frequented by more than one hundred species of terrestrial birds; which, for elegance of plumage, sweetness of song,

singular habits, and exquisite flavor, peculiarly invite the careful attention of the ornithologist, and the ardent zeal of the sportsman. The various secluded pools and sedgy waters, also afford, in spring and autumn, upwards of thirty species of aquatic fowl; as beautiful, flavorous and palatable, as can be found anywhere in North America. No country upon the globe, in an equal number of species, includes more specimens possessing higher claims to beauty and admiration. Trochilus colubris, certhia maculata, loxia rosea, and tanagra rubra, are justly esteemed, wherever known, for their most splendid colorings; while fringilla cyanea and turdus rufus, are no less prized for wonderful variations of note, and sweetest vocal powers. Among aquatic tribes, no individual can be found richer in its tints or more varied in its plumage than anas sponsa. This beautiful duck is of late, far from being common; but now it may be occasionally seen dipping its brilliant, azure wing in the glittering waters of the Hudson, or rising from among woody retreats that abound along its shores. - Poughkeepsie Journal.

"ALL NATURE DIES TO LIVE AGAIN." - Cold and cheerless winter advances with threatening aspect; vegetation shrinks at his approach, and perishes in his icy embrace! The pleasures of the walks have ceased for the season; the trees are stript of their foliage; the wide-extended heath looks dreary, and the traveller cowers to the beating storm, as he hastily measures his tiresome way. Summer's sweets and autumn's pleasures are no more! green-house we must now resort to view the beauties of the rose and lily, or to inhale their odors. At this inclement season it is natural to think of the suffering poor - the desolate aged man or woman, the forlorn widow, the helpless orphan. Winter, while it adds to their wants, cuts off many of their little resources for supplying them. They mark its approach with dismay, and their hearts almost wither when they ask themselves whence food, and fuel, and houserent are to come " in these hard times." Their life, ever the type of winter, when the buds of hope spring not, and the flowers of joy bloom not, and the fruits of contentment are not vielded, is now embittered by the reflection that the past season has not allowed them to lay up even their ordinary scanty store. seek out and comfort these is a duty the discharge of which will be followed by a satisfaction which the mere passive enjoyment of the

bounty of Providence cannot impart. Witnessing and ministering to the wants of this portion of our fellow men, our own perplexities will sink into insignificance, and we shall feel how truly better it is to give than to receive.

FRUIT NURSERIES.—The increase of these repositories of young fruit trees, we hail as a proof that our farmers are beginning to tire of the worthles trash with which many orchards are filled, and are willing to be at some trifling cost to procure trees of first rate excellence, and ripening at different times. Some farms have good fruit, but no variety of succession. A few days and a few dollars, spent each year by our farmers, or the dwellers in our cities and villages, would materially add to the beauty of their respective residences, and enhance the value of their properties.

Small fruit trees should be secured by stakes, especially those that are very low and limber, else they will be likely to be broken down by snows. Sometimes the snow is three or four feet deep and becomes wet and then frozen in a solid mass, so that when it settles in the spring it will break down tender trees unless they are well secured. In setting stakes by trees it is necessary to set them a little distance from the but of the tree, lest the roots be broken or disturbed in the operation. If the tree be very slim it should be tied to the stake as high up as the deepest snows usually come, and it may be well to tie such trees to stakes in several places. A few minutes' labor will save a tree that otherwise might be destroyed, which in a few years may afford an income of several dollars yearly.

Officers of the Massachusetts Horticultural Society.—
The following officers and committees were elected at the annual meeting of this Society in October last.

President-Elijah Vose, Dorchester.

Vice Presidents — Enoch Bartlett, Roxbury, Jonathan Winship, Brighton, Theodore Lyman Jr., Boston, John Prince, Roxbury.

Treasurer, Samuel Walker, Roxbury.

Corresponding Secretary, Robert Treat Paine, Boston.

Recording Secretary, Ezra Weston, Jr. Boston.

Counsellors — Augustus Aspinwall, Brookline, Thomas Brewer, Roxbury, Henry A. Breed, Lynn, George W. Brimmer, Boston, Joseph S. Cabot, Salem, E. Hersey Derby, Salem, N. Morton Davis, Plymouth, Nathaniel Davenport, Milton, Thomas G. Fessenden, Boston, David Haggerston, Watertown, Joseph G. Joy, Boston, William Kenrick, Newton, John Lemist, Roxbury, William

Lincoln, Worcester, Thomas Lee, Brookline, Charles Lawrence, Salem, William Pratt, Jr. Watertown, Benjamin Rodman, New Bedford, Samuel A. Shurtleff, Boston, M. P. Sawyer, Boston, Jacob Tidd, Roxbury, Charles Tappan, Boston, Aaron D. Williams, Roxbury, Jonathan Winship, Brighton, William Worthington, Dorchester, Thomas Whitmarsh, Northampton.

Professor of Botany and Vegetable Physiology - Rev. John L. Russell.

Professor of Entomology.-T. W. Harris, M. D.

Professor of Horticultural Chemistry.-J. W. Webster, M. D,

#### STANDING COMMITTEES.

#### Committee on Fruits.

Wm. Kenrick, Chairman,
Robert Manning,
Samuel Downer,
Benj. V. French,
E. M. Richards,
John A. Kenrick,

### Committee on the products of Kitchen Garden.

Samuel Pond, Chairman,
D. Chandler,
Jacob Tidd,

N. Davenport,
A. D. Williams,
R. Howe.

#### Committee on Flowers, Shrubs, etc.

S. Walker, Chairman,
C. M Hovey,
J. Breck,
S. Sweetser,
D. Haggerston,
S. R. Johnson,
W. Carter.

## Committee on the Library.

E. Vose, Chairman,
R. T. Paine,
W. Kenrick,
E. Weston, Jr.

C. M. Hovey,
M. P. Wilder,
T. G. Fessenden.

# Committee on Synonyms of Fruit.

J. Lowell, Chairman, W. Kenrick, R. Manning, S. Downer.

### Executive Committee.

E. Vose, Chairman,
C. Newhall,
B. V. French,

E. M. Richards,
E. Bartlett.

## Committee on Finance.

E. Vose, Chairman, B. V. French,

# CLOSE OF THE SECOND VOLUME OF THE HORTICUL-TURAL REGISTER.

The close of the present volume brings fresh to our mind the irreparable loss the Public as well as ourselves have sustained, in the sudden death of Thomas G. Fessenden, Esq., the senior editor, and with whom it has been our privilege to be associated. Having passed a life of usefulness, he rests from his labors. His name will be handed down to posterity as one of the benefactors of his country, and will live in the history of the improvement and progress of Agriculture in the present age.

During the present year we have passed through a season of unparalleled pecuniary distress in the commercial world, which has very sensibly affected a respectable class of our patrons, and as a natural consequence some have withdrawn their patronage: but at the same time others have stepped forward and supplied their places, so that our subscription list remains about the same. We were in hopes to have received a large accession of subscribers, which would have enabled us to add some embellishments. At the low rate the work is furnished we find it impossible, without doing injustice to ourselves, to do this at present. With the symptoms of returning prosperity, we have reason to believe there will be a revival in horticultural pursuits. With the hope that we shall receive more encouragement the year which is soon to commence, we shall venture to proceed with our labors.

With the assistance we expect to receive from a number of practical men, we hope to make the Horticultural Register useful and interesting. It is our desire, however, to have more aid afforded us by connoisseurs and amateurs in the science and art to which our publication is devoted. We take this opportunity to tender our grateful acknowledgments to those who have favored us with communications, and solicit a continuance of them.

To our patrons, especially those who have obliged us in a season so trying as the last, with prompt pay, we feel peculiarly grateful. Those who are still in arrears, we suppose, have forgotten the subject: to them we wish to say that the amount due would be acceptable.

Boston, Dec. 1, 1837.





